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J. H. GARO
JEANNE CALDUCCI

PHOTO-ERA

The American Journal of Photography

VOL. XVIII MARCH, 1907 No. 3

T. W. TOLMAN WHERE THE WEST WINDS BLOW

A PLEA FOR THE STEREOPTICON

W. GREEN

WHEN we arrive at manhood's estate we naturally look forward to quieter forms of amusement than those adopted fifteen or twenty years earlier, and it is well that we do so. Youth will always be served, and, should we attempt to match our prowess against that of youth, the victor is easy to discover. This need not deter us from ministering to the amusement of the younger generations, some day to take our place, and in doing this we can derive more real amusement than from any selfish pleasure.

The older we grow the more easily we forget that we once were children; but when some story is told that carries our recollection back to boyhood days a thrill of pleasure is instantly felt! This is no idle statement, as any of my readers will testify; but how many of them devote their spare time to giving amusement and instruction to the young people of their acquaintance? There are many ways of doing so, but I shall devote this article to a means but little used on this side of the Atlantic, and that is the stereopticon, or, as it is known to children, the magic lantern. I presume that most of my readers are photographers, and therefore will not be obliged to purchase lantern-slides, as, later in this article, I shall tell them how to make their own.

Do you remember when you went to a stereopticon entertainment, many years ago, and listened with bated breath as the lecturer related the valiant deeds of Jack, the Giant-killer; or feasted on the comic pictures and twinkling stars — chromatropes, we call them now? Does this not remind you that very few of these lantern-entertainments are being given now? In those days there were no cinematographs, which, I am told, have now supplanted the lantern, and I shall not be convinced easily that the children of to-day are not just as eager to see the brightly-painted comic pictures in the magic lantern that have done duty for ages.

You may say that with the advance of years the children nowadays are too practical and require more advanced forms of amusement. This is nonsense. The young children are the same as they ever were and ever will be; it is the older folk who think the lantern childish. Moreover, it is this very childishness that makes it interesting.

The winter days are short, the evenings long, and what can be pleasanter than to see your own and a few of the neighbors' children happily seated, looking at the constantly-changing pictures that can be shown them with a lantern? If you have never attended a home evening of this kind, get a lantern and try it; you will soon be repeating the pleasure thus afforded.

It is not necessary to be extravagant in buying comic slides, for the children of to-day will be equally interested with a few of those and many slides from your own negatives. It is the character of your slides, and the accompanying remarks about them, that ensure success.

About four years ago I was asked to give a lantern evening for some school-children, and, thinking that they must have seen and heard all the fairy-tales that are published, and having quite a number of local views, I ventured to give a lecture along the following lines:

I began by asking them to imagine that they were about to take a long vacation with me by means of the magic lantern. After showing the exterior of the school, we bade it good-by and visited places of interest in the neighborhood, very rapidly, a few words of description being given to each. When we reached a park or a similar scene I showed a few flower studies. I then called attention to some lecture-hall or theatre, and we all went in to see one of the fairy-tales and a few funny pictures. In that way I kept them constantly interested for over an hour and a half, concluding by going back to the safe custody of the teachers, whose portraits were then shown. A "Good-night" slide, and all was over, except the cheering and clapping, with a vote of thanks, when the lights were turned up. I got down from the lantern, parched and perspiring, and looking at the smiling, happy faces gathered around me, I felt amply rewarded for my pains, having put through the lantern, in the time mentioned, one hundred and fifty slides, only fifty-three of which were comic.

Do not let the expense be your excuse for not using the stereopticon during the winter evenings, as a good and serviceable instrument can be purchased for from $15.00 to $20.00, complete with oil-lamp or fittings for incandescent,

gas or electric light. Of the three, I prefer the electric light with 100 C.P. lamp; but as every house does not have the electric current, it is advisable to provide yourself with gas or oil fittings as well. Gas has advantages over oil, as it takes less room to pack, leaving the interior of the lantern for packing slides, etc., besides obviating the necessity of carrying kerosene.

I am sure, when once it is known that you have a lantern, you will find yourself in great demand throughout the winter evenings.

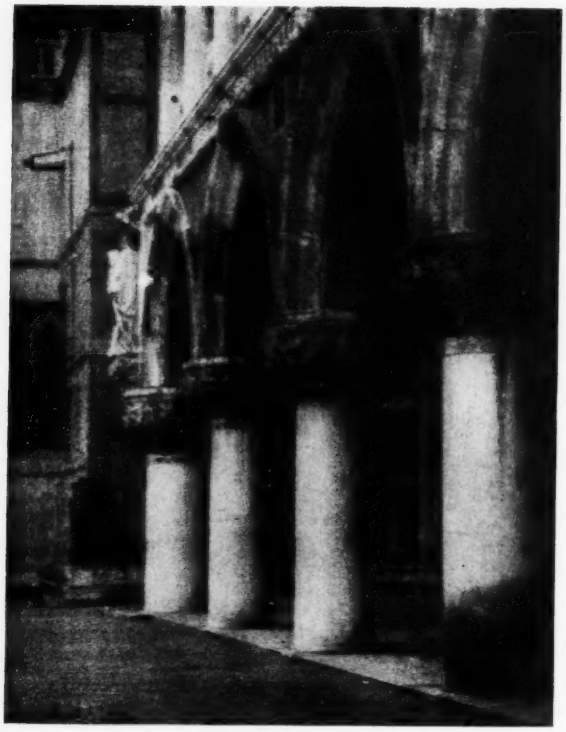
I have been much disappointed to find so few of the photographic dealers making a display of lanterns, and more so at the ignorance of lantern matters shown by the photographic assistants I have met. Surely the instrument that has brought fame and fortune to so many public lecturers should not be allowed to pass away in this enterprising and resourceful country. If only one dealer in each large town or city would make a specialty, during the winter, of the lantern and its accessories, I feel sure that ere long it would be as popular with amateur photographers as their cameras are in the summer; and why should it not be so? Think of the hundreds of good pictures that are made on holiday trips! What a wealth of amusement and pleasure is here locked up! If every photographer, professional or amateur, were to make one lantern-slide from each of his negatives that have a special interest, how quickly would he have a collection worthy of exhibition!

If you do not belong to a photographic club, you should join one, as you will then have an opportunity to see what more experienced workers are doing, and on lantern evenings your slides can be put through the stereopticon for the benefit of every one present.

If possible, get a lantern of your own, and you can thus afford many a pleasant evening to the inmates of hospitals, homes, schools and other institutions.

Do not allow the making of the slides to prevent your taking up lantern-work. It is not difficult, as some say; in fact, rather the reverse. The additional expense over your usual photographic outlay for lantern-plates, mats, cover-glass and binding-strips is very trifling. There are many good brands of lantern-plates, from any of which you can get good results. Personally, I prefer the Imperial plates, as I find they allow more latitude of exposure and give results of a very pleasing tone.

Any negative that is not too dense may be used to make lantern-slides, one full of detail giving the best results. The principal items to be considered in making these slides are: fineness of grain, as the results are destined to be magnified many times; latitude of exposure, if different portions of the slide are to be worked up to proper density; brilliance, especially in the high-lights, which should be absolutely clear glass; transparency of the shadows — the perfect lantern-slide should never be absolutely opaque in any but the deepest shadows (many lantern-plates which are excellent in other respects frequently give dense blacks, when slides with great contrasts of light and shade are made); adaptability to various developers, so that different color-effects can be produced to suit all subjects. When these features are combined, and the developer is



W. H. PHILLIPS DOGES' PALACE, VENICE

properly compounded, it is a simple matter to produce a perfect slide. As most lantern-plates lose some of their density during fixing, it is as well to develop a little darker than the finished slide should be.

An excellent developer for lantern-slides is as follows:

Solution A

Water	16	ounces
Metol	35	grains
Adurol	70	"
Sodium-sulphite crystals	$1\frac{3}{4}$	ounces

Solution B

Water	16	ounces
Potassium carbonate	$1\frac{3}{4}$	"

For use, take one and one-half ounces each of A and B, adding five to ten drops of a ten per cent solution of potassium bromide. The above developer will give slides of a good black color, with plenty of detail. If warmer tones are

THEODORE EITEL LANDSCAPE

desired, dilute the developer, increase the quantity of bromide and give longer exposure.

I have not said anything about the time of exposure required, as it naturally varies with the kind of plate used and the density of the negative to be printed, but a few experiments following the instructions enclosed in each box will soon enable you to get the correct exposure.

An acid fixing-bath should be used, any of the regular published formulæ giving good results. In addition to illustrated lectures, lantern-slides can be used for other purposes. When backed with ground glass and set in metal frames, they make charming window transparencies. Decorative window-panels can also be made by those who are artistically ingenious, by combining several slides on one sheet of ground glass with colored passepartout binding. Thus a stained-glass window effect can be produced easily. Lamp-shades can be made by those who are at all handy with tools. Other ways of utilizing your slides will suggest themselves, but the lantern is the principal one under consideration. When lantern-slides are used for public exhibitions it may be desirable to impart to some pictures a more natural appearance. This can be accomplished by the different toning-processes published in text-books on this subject; or, better still, color them yourself.

A PHOTOGRAPHER'S NOTES IN THE BALKANS

FELIX J. KOCH, A.B.

ON photographing the simple Serb-Church peasants, in the Sandchak, or district of Novi-pazar, the most dangerous section in European Turkey, they will watch the process with suspicious interest, and, when it is over, shake the photographer's hands with delight.

Inasmuch as all books are prohibited in Turkey, one's little record of photographs taken must be carefully hidden next the skin, lest the customs officials confiscate it; when, at best, it will be sent to Constantinople, and, months later, come sailing home.

At Plevlje, the capital of this region, women of the Christian sects are inordinately averse to posing — owing to fear of being compelled to pay on completion, rather than for any other motive. Moslem women obviously dare not pose for a man, if they would.

Not until the summer of 1904 did the American camera enter this territory — probably the last in Europe for its invasion — and then a travelling Dutchman was the first to become captivated by its superior merits over those of the instrument he carried.

Photographs in the higher north-Turkish Balkans must frequently be made from horseback. With the constant twitching of the skin to which the animals there are accustomed, even the "snap-shot" is apt to be spoiled by a movement of the camera at just the wrong moment. That, however, is only the least of the difficulties the photographer experiences in the Nearer East.

Although the Koran forbids the portrayal of things animate, and books are closely censored at the border, the Turks admit the camera freely, and as freely pose for the photographer — even to the Pashas, or Governors of the districts themselves. The story goes that the Sultan is an enthusiastic photographer, having probably the most costly instrument in the world, but owing to inability to get good results he is now beginning to tire of the pastime.

In the interior of Hungary, in the vicinity of the Ice Caverns — although tourists are rare — the picturesque Saxon lumbermen expect pay for halting their teams a moment to be photographed. Eight cents is enough to make one of these men quite happy for such stoppage.

On the Serb frontier, duty is assessed on films, unless one be a press correspondent. Then they go through free.

Belgrade, in fact, has one of the most modern photograph studios in Europe, and the work done is remarkably fine — far and away beyond anything one anticipates in the Balkans, and even outdoing the Bucarest photographers, who are largely Parisian in their methods. The Belgrade man is the Clinedinst of his country — but his rates are low. For exclusive pictures of the king, prince and crown prince, the princess and the apple, orb, mace and buckle of state, each separate, his price is two dollars and five cents, and coronation prices at that.

FELIX J. KOCH
VILLAGE STREETS TEMPT THE CAMERIST
A ROUMANIAN CROCKERY-MARKET
ONE OF MANY PICTURESQUE DWELLINGS

FELIX J. KOCH A BULGARIAN MOTHER AND BABY

On passing into Roumania, from the Danube at Giurgevo, film is almost unknown, so much so that it was necessary to explain its uses and purposes to the customs inspector at the port.

Bucarest, the Parisian capital of Roumania, likewise has its royal photographers, and in their studios may be found three pictures, not quite as well done as the Serb product, including the queen at a *folks-fest;* a cabinet of a lady of high rank, who permits the sale of her picture; and one other; the price is one dollar and forty cents.

At the annual agricultural exposition, at Bucarest, a cinematograph was last year in operation, throwing on the screen pictures of the Russo-Japanese war. Cereal displays at this fair likewise were enhanced by means of photographs. At the Serb coronation of 1904, at which all photographers were disappointed by prevailing fogs and wet weather, so much so that the representatives of a number of illustrated papers went home, without results, a cinematograph was likewise in operation, at the expense of an English consul in a central European town, who is likewise the member of Parliament for Sheffield, and whose hobby happens to be cinematograph-photography.

FELIX J. KOCH ROUMANIAN GIRLS

At Sofia, the capital of Bulgaria, a biograph establishment has been opened in a tent, and, with the admission placed at ten cents, is frequented largely by the poor — notably of the male sex. The walls of the National Museum, in this city, are hung with excellent photographs of modern Bulgaria —which, in addition to their artistic excellence, will prove of great historic interest to the future, and represent a scheme of preservation of national growth that our American museums might well emulate.

On the trains in North Bulgaria mothers of the middle class are often quite averse to having their cunning little ones photographed by the traveller. A good light and a quick lens usually manage, however, to do the work on the sly.

Women working in the tobacco-fields in the far south of this principality see strangers, and notably strangers not in national costume, so rarely that the approach of the camera will cause them to flee — until one's interpreter succeeds in assuring them that no evil is intended.

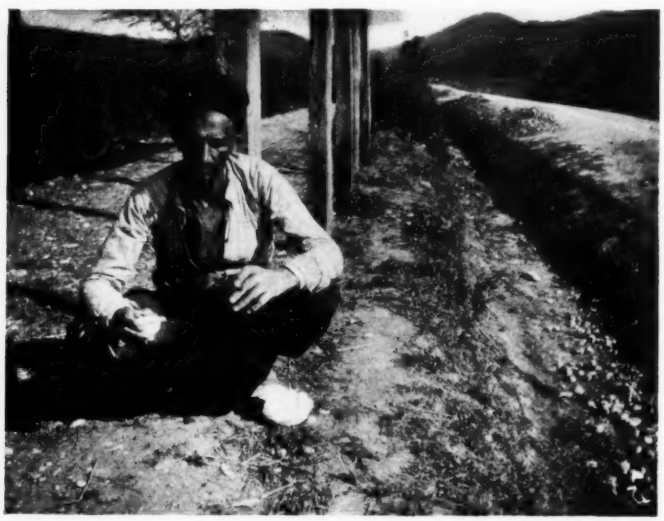
Although quite a few photographs adorn the walls of the reception-room — and, among them, one of a woman — the monks of Rila Monastery, in the lower end of Bulgaria, where, it is thought, Miss Stone was secreted, have no

photograph of their abbot to sell, or give, or even show the rare traveller asking for such a souvenir. They themselves, however, pose readily for pictures, and as Lower Bulgaria is the photographer's Eden of the world, a jaunt to the monastery is most satisfactory.

In Bulgaria one is permitted to take photographs in and about an army barracks. This is absolutely unheard of in Austria and Hungary, and in Germany the sight of a camera in the vicinity of a fort is liable to lead to one's arrest on suspicion. At Nisch, in Servia, I myself was arrested for having a camera case over my shoulders and taking notes in a commercial part of the town, Nisch being the military stronghold of Servia. In Monistir, Turkey, too, the presence of the camera confirmed the belief of a soldier-patrol that I was a spy, and led, likewise, to arrest. As these incidents afford the coveted opportunity to inspect the prisons of these lands, they are not altogether regrettable.

In the north of Turkey it is interesting to note that Turkish women will deliberately stop, in a vista of street being photographed, and assume a pose so as to "be in the picture," providing no male Turk is in sight. To as much as address a Moslem woman, in Turkey, is liable to serious misinterpretation; and so the usual way of "taking" them is to pretend to be angered at their walking across the perspective which, it would seem, is to be "taken," and then, when the veiled dames are exactly in focus, quietly snap the button.

At Salonica, the young Spanish-Jew boys who vend the souvenir postals and serve as bootblacks exhibit an aptitude for posing that is almost unbelievable for so uncultured a race as they.



FELIX J. KOCH IN BOSNIA ARE SPLENDID TYPES

A PRACTICAL INTRODUCTION TO LANTERN-SLIDE MAKING

REV. T. PERKINS, M.A.

THE making of lantern-slides by photography is one of the most useful and interesting operations open to the practical photographer. It presents no difficulties which may not be surmounted by the exercise of a little patience and care.

A "Slide" Compared with a Negative.— A photographic lantern-slide is a positive printed on a sensitive film (generally gelatine) spread on a glass plate $3\frac{1}{4}$ inches square (American size, $3\frac{1}{4}$ x 4). This film bears a general resemblance to that of a negative plate, and is developed and fixed in a similar manner, but the film is of finer grain, thinner and less sensitive, and development is not carried so far. The slight veiling of the clearer parts, often an advantage in a negative, would ruin a slide.

A Good Slide.— A pleasing color, whether black, brown, purple or red, may be given to the metallic deposit. This is secured partly by the character of the emulsion of which the plate is made, partly by the constituents of the developer. A technically perfect slide has its highest lights clear glass, its half-tones full of detail and gradation, and its deepest shadows *nearly*, but not quite, opaque. The area of clear glass must be small, and finally the picture should be sharply defined, so as to bear considerable enlargement when projected on the screen.

Kind of Negative Required.— Though good slides may by modification of exposure and development be made from negatives which are not ideally the best for the purpose, yet the process is made easier if the photographer who intends to make slides bears this object in mind when exposing and developing his negative plates. The best negatives for the purpose are those that have plenty of detail and good gradation. A hard negative is liable to produce a slide which gives a stagy, limelight-like effect on the screen.

Contact Method.— In contact-printing the objects are of the same size on the slide as in the negative. As the lantern-plate is only three and one-fourth inches square, and one-eighth inch all round the edges is covered by the binding-strips which fasten the cover-glass to the lantern-plate, an area of three inches square is all that is available for the picture; but as a square is not a pleasing form, the subject will generally have to be included within a rectangle of 3 x 2 inches.

This should be borne in mind when composing the view on the focusing-screen of the camera. A rectangle 3 x 2 may be marked with a pencil on the ground glass, or a mask with an aperture of three inches square gummed to it, to show all that can possibly be included in the slide.

Point of Sight.— Though a contact-slide may be made from any part of a large negative, yet in any subject in which perspective is shown, unpleasing results will be produced if the "point of sight" is not included and does not fall near the vertical line that divides the lantern-slide into two equal parts.

If more of the subject than is included within an area of three inches square of the negative is to be printed on the lantern-plate, the slide must be made by reduction.

Contact.— Equally good slides may be made by either method, but each has its own advantages. For contact-printing no special apparatus is wanted, and, as artificial light is used, slides may be made at any time; also the intensity of the light can be altered easily to suit the negative.

Reduction.— Slides made by reduction require daylight, the intensity of which often varies and is difficult to estimate; a reducing-camera is needed. These are disadvantages, but, on the other hand, slides may be made from negatives of any size which have not been specially taken with a view to lantern-work.

To Make a Fixed-Focus Reducing-Camera. — The following dimensions are those suitable when reducing from a half-plate negative (6 x 4 clear) using a five-inch lens: Get a $\frac{3}{4}$-inch plank of well-seasoned deal 2 feet x $8\frac{1}{2}$ inches and three $\frac{1}{2}$-inch boards (A, B, C) $8\frac{1}{2}$ x $6\frac{1}{2}$ inches (Fig. 1).

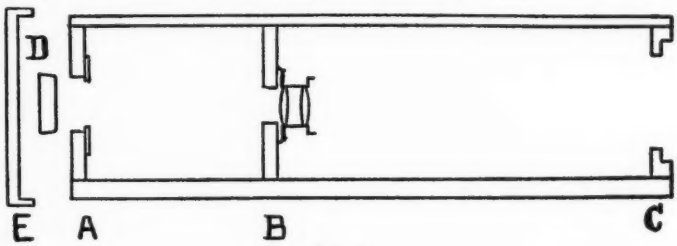


Fig. 1

Cut in A a central aperture three and one-fourth inches square, and glue thin strips along two opposite sides of the aperture so as to form a rebate for the lantern-plate.

Cut in B a central circular aperture to fit the lens-flange.

Cut in C a central aperture 6 inches x $4\frac{1}{2}$ inches, and on one face of C sink a margin round it one-fourth inch wide to hold the negative. Use turn-buttons to fasten the negative in place. Screw C to one end of the plank and at right angles to it, the counter-sunk side outwards.

The optical centre of the lens must be fifteen inches from the negative and seven and one-half from the lantern-plate. As it is not easy to determine the exact position of this point, use these measurements as a first approximation and make the final adjustment by trial, thus: Put a glass plate, on which a sheet of printed matter has been pasted, in C; get some one to hold B with the lens (preferably a flat-field one) attached in the position shown in the diagram; and hold A in position with a ground-glass screen in the aperture. If the image of the whole of the plate in C is not included on the screen, shift B further from C and shift A till the image is sharp. If the image of the plate in C is not three inches in length, shift B nearer to C. When the position of B is found, screw

it to the plank, then finally adjust A and fasten it in position. Nail stout millboard along each side and along the top from A to C, paint all the inside dead black, and paste strips of book-binder's cloth along all joints. Fit a square of wood, covered on one side with black velvet, into the aperture in A to hold the plate in place; make a cardboard cap E like the lid of a plate-box to cover this end of the camera and exclude all light.

To Use this Camera.— Put the negative into C, a lantern-plate into A, *film facing film.* Take the camera from the dark-room, the negative end covered with a cloth; turn this end towards the open sky, being careful that no trees or buildings obstruct the light. Expose by removing the cloth; then return to the dark-room and develop.

The measurements for the other-sized negatives are approximately as follows:

$\frac{1}{4}$-plate (4 x 3 clear) — AB=$8\frac{3}{4}$ in.; BC=$11\frac{2}{3}$ in.
$\frac{1}{2}$-plate (8 x 6 clear) — AB=$6\frac{2}{3}$ in.; BC=$18\frac{1}{3}$ in.

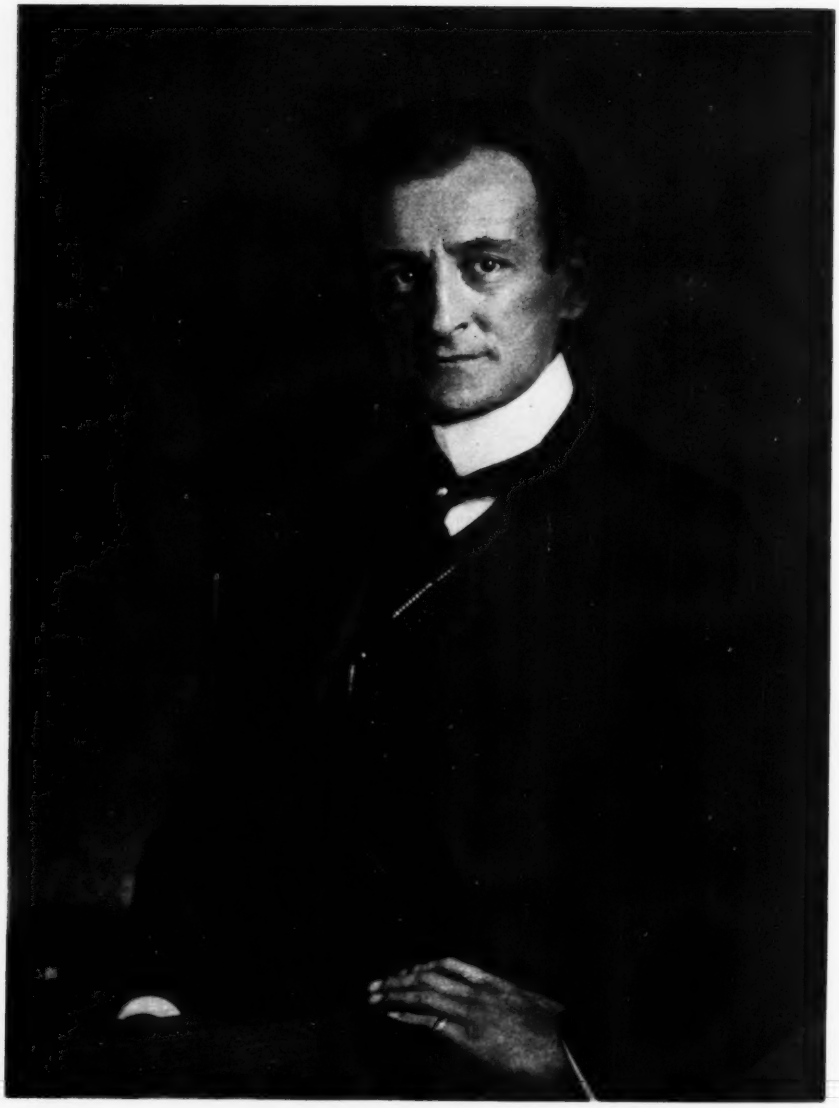
The table below shows approximate conjugate distances for reducing negatives to lantern size.

Size of Negative.	Focal Length of Lens.									
	5″		6″		7″		8″		9″	
	Conjugate Distances.									
($\frac{1}{4}$-pl.) $4\frac{1}{4}$ x $3\frac{1}{4}$	$11\frac{3}{4}$	$8\frac{3}{4}$	$14\frac{1}{4}$	$10\frac{3}{4}$	$16\frac{1}{4}$	$12\frac{1}{4}$	$18\frac{3}{4}$	14	21	$15\frac{3}{4}$
5 x 4	$13\frac{1}{4}$	8	16	$9\frac{3}{4}$	$18\frac{3}{4}$	$10\frac{1}{2}$	$21\frac{1}{4}$	$12\frac{3}{4}$	24	$14\frac{1}{2}$
($\frac{1}{2}$-pl.) $6\frac{1}{2}$ x $4\frac{3}{4}$	16	$7\frac{1}{4}$	19	9	$22\frac{1}{4}$	$10\frac{1}{4}$	$25\frac{1}{4}$	$11\frac{1}{2}$	$28\frac{1}{2}$	$13\frac{1}{4}$
$7\frac{1}{2}$ x 5	$17\frac{1}{2}$	7	21	$8\frac{1}{2}$	$24\frac{1}{2}$	10	28	$11\frac{1}{4}$	$31\frac{1}{2}$	$12\frac{1}{2}$
($\frac{1}{1}$-pl.) $8\frac{1}{2}$ x $6\frac{1}{2}$	$18\frac{1}{2}$	$6\frac{3}{4}$	23	$8\frac{1}{4}$	27	$9\frac{1}{2}$	$30\frac{3}{4}$	$10\frac{3}{4}$	$34\frac{1}{2}$	$12\frac{1}{4}$
10 x 8	$21\frac{3}{4}$	$6\frac{1}{2}$	26	$7\frac{3}{4}$	10	9	$34\frac{3}{4}$	$10\frac{1}{4}$	39	$11\frac{3}{4}$
12 x 10	25	$6\frac{1}{4}$	30	$7\frac{1}{2}$	35	$8\frac{3}{4}$	40	10	45	$11\frac{1}{4}$

For example, if reducing a whole-plate negative ($8\frac{1}{2}$ x $6\frac{1}{2}$) to fall within the 3 x 3 picture-space with a 7-inch lens, we should have approximately 27 inches between the lens and negative and $9\frac{1}{2}$ between lens and plate.

NOTE.— By adding together the two conjugates we get the base-board length.

To Make an Adjustable Reducer.— Get a plank about a yard long. Along each edge nail strips, as shown in Fig. 2. Make a carrier for the negative (see diagram); this will slide along the board, being held at right angles to it by the strips. Fix the camera (a back-focusing quarter-plate one with rising and falling front, by preference) to the plank by a tripod screw passing through a hole in the board. Raise the camera by blocks if necessary till the lens is opposite to the centre of the carrier. Shift the carrier backwards or forwards till the image of the portion of the negative to be copied occupies the central area of the three-



J. H. GARO
DR. KARL MUCK

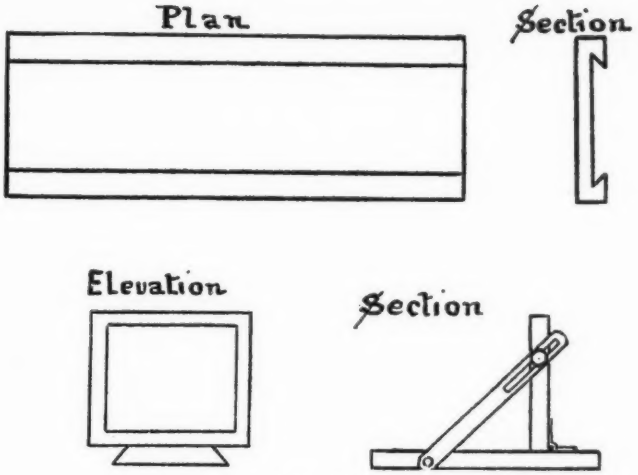


Fig. 2

inch square on the focusing-screen, using the rising front and swing front if necessary; focus, changing the stop if necessary, till the image is sharp; cap the lens; turn the negative end to the open sky. Cover the space between the camera and negative with a cloth to exclude the light as far as possible (*absolute* exclusion is not indispensable), insert the plate-holder and expose, removing the cap with the hand passed underneath the cloth. Remove the plate-holder and develop as usual.

Contact-Printing.— When making slides by contact, place the negative in an ordinary printing-frame, lay the lantern-plate film side downward on it, carefully adjusting it to include what is wanted, close the frame and carry it under cover to a room, darkened by drawing window-blinds and curtains, in which a lamp with an opal globe is burning. Hold the frame to the light, say at six inches from the globe (if at double the distance the exposure must be increased fourfold, and so on according to the law of inverse squares).

Exposure.— The correct time of exposure must be learned by practice. The following plan will help. Cover two-thirds of the plate with a card held against the frame; expose, say, one-fourth minute; shift the card so as to uncover another third and expose for the same time; remove the card and expose again for the same time. The three strips of the plate will have received three-fourths, one-half and one-fourth minute's exposure respectively. Develop and see which strip looks best. Repeat the same process with another plate, if necessary, giving different exposures.

Similar tests may be made when reducing either by covering up portions of the negative or by pushing in the slide of the plate-holder a portion of its available distance.

Development.— The formula I use is:

A

Hydroquinone	¼ ounce
Potassium metabisulphite	¼ "
Potassium bromide	30 grains
Water	10 ounces

B

Caustic soda	¼ ounce
Water	10 ounces

C

Ammonium carbonate	½ ounce
Ammonium bromide	½ ounce
Water	10 ounces

All these will keep well for a long time in stoppered bottles. B requires shaking before use. For use, take one-fourth ounce A, one-fourth ounce B, one-half ounce water. This will give black tones or colors.

Warm Colors by Development.— By adding some of solution C, increasing the exposure and time of development, warmer tones are obtained. When a little of C is added and exposure slightly increased, the color will be brown; if more, purple, and finally red. Thus if the exposure for black tones is one-fourth minute, one-half minute with thirty minims of C will give brown, one and one-half minutes with sixty minims of C, purple, and two to three minutes with one hundred and twenty minims of C, red. Black-toned slides will be sufficiently developed in two or three minutes; red-toned ones may require fifteen minutes. When much of C is used the color of the deposit seen by reflected light is drab, hence the process of development can be seen only by holding the plate between the eye and the dark-room lamp. The dark-room light may be used much brighter than when developing ordinary negatives.

Experience alone will show how far development must be carried, but if the slightest veiling of the high-lights, as seen by reflected light, appears, when black or brown tones are aimed at, development must be stopped at once.

With a normal developer, under-exposure is shown by slowness of appearance, over-exposure by great rapidity, and by a thin, flat image after fixing. No forcing of an under-exposed plate is possible; it will lead only to fog.

Tentative Development.— My usual method of developing is as follows: I aim at brown tones, but mix three solutions: No. 1, suitable for black; No. 2, for brown; No. 3, for red. I put the plate into No. 2, and if all goes well finish it in it. If the exposure has been insufficient, I transfer the plate to No. 1; if more than enough, to No. 3. By transferring backwards and forwards between No. 2 and No. 1, or No. 2 and No. 3, I generally get a good slide, though not always of the color I aimed at. The same solution will serve for the development of three or four plates in succession. When sufficiently developed, the plate is well washed, and fixed in a clean solution of hyposulphite of soda. Lantern-plates fix more quickly than negatives.

After fixing, rinse under a tap, and wash in several changes of water for three or four hours — more will not matter. I generally leave slides made in the evening in water all night.

Any grooved washing-tank may be used, but the plates can be well washed if placed face downwards in saucers, or if four plates placed in pairs back to back are put into a two-quart preserve-jar full of water.

Dipping the slides in a very weak solution of hydrochloric acid, one part to sixty of water, about the middle of washing, often brightens them.

Clearing and Reducing.— Slides slightly veiled or stained may be cleaned by immersion for a short time in Howard Farmer's reducer. This reducer increases contrasts. It may also be applied locally by means of a brush or tuft of cotton. Some indication of clouds in a sky of uniform tone may be introduced by means of this reducer. The persulphate of ammonium reducer may be used to reduce over-developed slides, especially those in which contrasts are too strong.

Intensification.— Weak slides may be intensified by bleaching with mercuric chloride, followed by a weak bath of ammonia; but as the results are not permanent and as the color is altered, this process is not to be recommended. It is better to make a fresh slide. After reducing or intensifying the slide must be well washed.

Drying.— After washing, slides should be set up to dry of themselves in a place where no dust can settle on them. Drying must not be hurried by artificial heat; a current of pure dry air will soon dry a slide. On no account must the film be touched before it is dry.

Masking.— When perfectly dry the slide will require a mat. Mats with apertures of various shapes and sizes may be bought. Those with rectangular corners are generally most suitable. But the cover-glass must not be put on until slide and mat are bone-dry, as if any moisture is enclosed between slide and cover-glass it will form a mist when evaporated by the heat of the lantern.

Binding.— Place a clear cover-glass on the film side of the slide, cut the binding-strips into lengths of three and one-fourth inches, moisten the gummed side, lay the strip gummed side upwards on a soft table-cloth, hold the slide and cover-glass firmly together, press one edge down on the strip (this will adhere to it), turn the slide with that edge upwards so that the finger and thumb of the other hand can press the edges of the strip against the outer faces of the slide. Next bind the opposite edge, then the two others. Do not use metal binders — only paper or tape.

Spotting.— Lay the bound side on the table cover-glass upwards (the view will then be seen right as regards right and left). Stick two little bits of paper at the two upper corners and a strip of paper along the upper edge for the title, and the slide is finished ready for use. The bits of paper show which way the slide must be put into the lantern.

Covers.— Cover-glasses may be bought at a moderate price or made by clearing the film from a spoiled lantern-plate. The film will generally peel off

if the plate is laid for half an hour in a weak solution of hydrochloric acid; if it will not strip off by this method, a few strokes of a stiff nail-brush will easily remove it.

How to Make Slides from Different Kinds of Negatives.— If the negative is thin, print in a weak light, either by turning down the lamp or holding the printing-frame further from it; or, if the slide is made by reduction, by placing a sheet of ground-glass or pale yellow gelatine over it. A slide showing increased contrasts may be obtained from a flat negative, even if dense, by giving a long exposure to a weak light.

If the negative is too strong in contrasts use a strong light; this will pierce the dense parts, and by over-exposing the clear shadows, weaken them.

Distortion.— Distortion in the negative, caused by the negative-plate not being plumb at the time of exposure, may be remedied by using the adjustable reducing-camera, if the upright part of the carrier, instead of being fixed at right angles to the base, is hinged to it (see diagram No. 2) and provided with side supports similar to those on cameras.

Suppose the vertical lines of a building in the negative converge towards the top: place the negative upside down in the carrier, and swing the top of the carrier away from the lens; at the same time swing the back of the camera away from the lens, so that the lantern-plate and negative make equal angles, in opposite directions, with the base-board. The amount of swing must be found by trial. It is important that *both* carrier and camera-back should be swung, as though parallelism of the vertical line could be secured by swinging either, the ratio of horizontal to vertical dimensions would be altered.

Barrel distortion due to the use of a single lens in taking the negative may be overcome by reversing the single lens in the flange of the camera when making the reduced slide by the adjustable reducer.

Choice of a Plate.— There are several firms who make lantern-plates, any of which will give good results. It is well to keep to one kind. It is recommended, however, that when a manufacturer supplies two series, one "rapid" for black tones only, one "slow" for black or warm tones, that the latter should be chosen, and that all fancy plates made for special purposes should be avoided until thorough mastery of the making of slides on the ordinary kind has been obtained. Process-plates and the very slow plates that can be developed by candle-light, all useful in their way, should be reserved for subsequent work. It is well also at first to adhere to one developing-agent, and not to try first one and then another of the many developers on the market because beautiful slides have been seen made by some particular formula by other workers.

Clouds and Sky.— Slides in which the sky is represented by bare glass do not look well. If there are any indications of clouds or an even-toned sky on the negative which do not show on the lantern-plate with an ordinary exposure, shading the landscape part of the negative with a moving card or cloth while allowing the light to fall on the sky part will sometimes mend matters; or suit-

able clouds may be printed on a separate lantern-plate, which when finished is used as a cover-glass. Any part of the clouds that would overlap the objects on the lantern-plate can be removed by a strong solution of Farmer's Reducer (a few drops of a saturated solution of ferricyanide of potash added to some clear fixing-solution). But skies thus added are not always satisfactory; for, except when the slides are black-toned ones, it is difficult to match the color of the sky to the landscape, and again, such skies often seem much too prominent — in the same plane with the middle distance instead of retiring to the extreme distance.— *The Practical Photographer, No. 11.*

C. W. CHRISTIANSEN WINTER IN THE WOODS

AMATEUR PHOTOGRAPHY AND WASTE OF WATER

IN spite of all that has been said and written, the photographer to-day believes firmly that unless his negatives and prints are washed for a long time — generally in running water — they will not give reasonable promise of permanence. Moreover, the great body of photographers seem to place implicit faith in soaking in water to remove hypo. We hear of negatives left washing all night, and of prints left for five or six hours in a print-washer. Granted that permanence in itself is desirable, this is not the way to attain it, nor is it the way to deal with reasonable economy with the water. It is the aim of these few paragraphs to show, first, how to ensure as much permanency as can be expected with a silver print, and then how to remove the hypo effectively with a minimum both of labor and of water.

Experiments have shown, beyond all doubt, that the most important condition of permanence is thorough and complete fixation in a hypo-bath free from any tendency to deposit its sulphur. A strength of three ounces of hypo to a pint of water, used for the first time, either with or without the additions necessary to make it an acid fixing-bath, would unquestionably fix any P.O.P., bromide or gaslight print in ten minutes at ordinary temperatures. This does not mean that it takes ten minutes to fix the print — probably the action is virtually complete long before — but that ten minutes is long enough to give us a guaranty of complete fixation. With negatives, whose sensitive film is much thicker and contains more silver, and that in a form not so easily attacked by the hypo, ten minutes might not suffice; but with negatives the eye gives us an indication how rapidly the process is progressing, and if we allow the whole of the whitish deposit to disappear, and leave the plate in the hypo for as long again as the time taken to do this, we need have no fear of incomplete fixation. The great cause of deterioration due to incomplete fixing does not lie so much in not giving the hypo sufficient time to do its work, but rather in using hypo-baths over and over again, without having any clue whether they are still efficient or not. If at the end of each day's work the hypo that has been used is poured away, the greatest step towards permanence has been taken.

But we will suppose the negative to be fixed, and that we wish to wash it quickly and thoroughly. The first step to take is to remove all the hypo solution clinging to the glass at the back and edges. We can do this under the tap or in a dish by giving it a gentle rub with a sponge or brush; contrary to the general belief, a mere rinse does not remove it effectively, but a rinse and a rub will do so. Then, draining the negative till water ceases to drop from it, we may place it in a dish and just cover it with water. Messrs. Lumière showed some years ago that a negative was washed as thoroughly when its surface was just covered with water as it would be if it were at a depth of an inch or more. The great thing is to make sure it is covered. After remaining like this for three minutes, it is taken out and drained until it ceases to drip, while the dish is emptied, rinsed out with a rub and refilled. The negative is then put back for another

three minutes, when the operations are repeated. After half an hour of this treatment it is completely washed, and only needs a rub with a tuft of absorbent cotton either under the tap or in the dish, and may be stood up to drain and dry. Proceeding in this way, a couple of pints of water are a most liberal allowance for the washing of a half-plate.

The photographer may say that this is far too much trouble; it will not compare in convenience with the mere slipping of the plates into a washer and leaving them there with water running through. On the other hand, the washing is done much more quickly; and there is no need to give half an hour to each negative, as several can be dealt with at once. If a washer must be used, the most effective one has an opening at the bottom by which every drop of water can be drained out of it. This may be closed and the washer filled and left full for three minutes, then opened, and a couple of minutes given to allow it to drain as much as possible, and so on. Three-quarters of an hour should be given in this case, as the elimination of the hypo-laden water is not so complete each time as when a dish is used. Any one who wishes to convince himself of the greater efficiency of this filling and emptying than of any washer with a current of water merely running through it has only to add some violet aniline ink or some permanganate solution to the water in both. He cannot fail to notice how much longer the coloration persists in the running water.

Hypo solution is more clinging than is generally realized. It is, therefore, a great help to quick and thorough washing to give the glass side of the negative a rub with a sponge now and then, and the film side may be held under the tap and rubbed gently with a tuft of cotton.

The washing of prints is different from that of negatives, because, for one reason, there must be some means provided to prevent the prints from clinging together during the operation.

The commonest cause of lack of permanence, as has already been pointed out, is insufficient fixing; and this is greatly encouraged by allowing the prints when in the hypo to remain one on top of another. If dish-room for them all to lie side by side is not available, then the prints must be kept moving all the time of fixing, and a quarter of an hour instead of ten minutes should be allowed, to make quite sure. The proper way to keep them moving is to slide the bottom print out and place it on the top, then slide the next one out and put it on the top, and so on. When the print is put on the top, it should be pushed well under the surface with the fingers, so that the next print when it comes is thoroughly wetted with fresh hypo solution on both sides.

Coming now to the washing of the prints, we have the same principles to go upon as with negatives. Running water is to be avoided; thorough and complete changing and draining are the secrets of success. Each print should have a preliminary rinse in clean water, so that it conveys to the first washing-water as little hypo as possible; and then it may be placed in a dish of water for a minute or two, just as was the case with the negative. But presumably there are many prints to be dealt with. In such a case each has its bath of clean water

at first, and is taken out of that and placed in a dish of water with its fellows. When all are in this, the pile is turned over *en masse*, and a dish of clean water being put beside the first, the two top prints are taken out and held by one corner and allowed to drain. When they cease to drip they are put into the clean water and two more taken out, drained, and put in on top of them, and so on until all are in the second dish. The first dish is then emptied, sponged out, filled with clean water, and, the pile being turned over again, the prints are drained two at a time and put into it as before. Care must be taken to prevent any of the drainings going into the clean water, of course.

Eight complete changes of this kind will be found to remove the hypo more effectively than a long time in a washer with running water. It is a great economy of time, and a still greater one of water. There is also the added assurance that the hypo is actually washed out. There are few washers, indeed, in which prints may be left for an hour or two with complete certainty that they have not spent the greater part of the time in clinging together, and nothing is more certain than that as long as they cling together they do not wash.

In the investigation by Messrs. Lumière, to which reference has already been made, they showed that the elimination of hypo from prints can be greatly hastened by squeegeeing. To take advantage of this fact, we may take the pile of prints out of the dish, instead of merely turning them over, place them on a clean piece of glass, cover them with a rubber sheet, and gently squeegee them. The mass is then placed just as it is in clean water, upside down, and the prints are then taken two by two, drained, and placed in a second dish of clean water. When all are transferred they are again taken out and squeegeed. Five or six such washings and squeegeeings should be ample.

No one can fail to see how great an economy of water over ordinary methods of washing is secured by treating the prints on these lines. A dozen half-plate prints can be thoroughly washed with not more than half a gallon of water. What is more, they are not merely put in a washer and *believed* to be washed; they are actually washed, and the fact that they contain no hypo may be depended upon. It is something also to have reduced the quantity of water wasted by ninety or ninety-five per cent; but it is to be feared that this as an argument by itself relies too much on the altruism of the photographer. The real merits of washing in the manner described above are that it is speedy, complete and reliable; in actual practice it will be found by the photographer no more trouble than the old, wasteful and inefficient methods.

There is one word more to be said. It is an undoubted merit of these processes that they do away with long soaking of the prints or negatives. This soaking is in itself most injurious. Not only is a gelatine film at its very weakest when it is wet, and least able to resist the many things which may injure it, but from the very first moment that it becomes wet its decomposition commences. Every one knows the likelihood of a negative that is left in the washer all night being spoiled. Even if it is not actually ruined, its surface is tender and pappy, and most prone to injury when it is taken out. Moreover, if the water is at all

NIAGARA FALLS

COURTESY OF "LANDMARK"

alkaline, as most waters are, the color of the image may be completely altered by long washing, becoming much more yellow, and the image correspondingly denser. Much the same applies to prints. The sooner any gelatine film, whether on glass or paper, is finished off and dried, the better for it. Enough has been said surely to show that within three-quarters of an hour from the time it leaves the hypo any plate or print should be ready to be put up to dry.— *Photography.*

WHEN IS THE FIXING-BATH EXHAUSTED?

The Results of an Interesting Investigation by Lumière and Seyewetz

SINCE the foregoing article was written, A. and L. Lumière and Seyewetz have published a very important paper on the limitations of the use of a fixing-bath, showing the amount of fixing it will do before reaching exhaustion, and a copy of this paper lies before us as we write. It gives many details of the experiments which they undertook, which are not without their interest to the scientific worker, but most of our readers will, no doubt, want the conclusions to be drawn from them, rather than the methods.

It must be understood, in starting, that if plate after plate is fixed in the same hypo-bath, a stage is reached eventually, as is well known, when, although the solution appears to be fixing the plate, it is not actually removing the whole of the silver it dissolves; and if the negative is subsequently exposed to light, as a negative must be to be printed, and even, in time, if it is not exposed to light, it will gradually turn yellow, or in bad cases brown, from the silver contained in it. Long before the fixing-bath has reached such a stage it should be discarded; but how much fixing will a solution do before it gets into that condition?

The reply made by Messrs. Lumière is that it all depends. A quantity of hypo making a weak bath, within limits, will do more fixing than the same quantity in a larger volume of water; an ordinary acid-fixer will fix properly only half as many plates as a plain hypo solution of the same strength would do. But, on the other hand, when chrome alum is also present in the acid-fixer, the quantity of work it will do rises to three-fourths of that done by plain hypo.

The actual figures given in the paper, translated into British sizes and measures, are given below; in every case they are only approximate. The standard strength of hypo solution dealt with is fifteen per cent — that is to say, three ounces to a pint. Messrs. Lumière and Seyewetz state that to prevent all risk of subsequent discoloration not more than seventy quarter-plates, thirty-two half-plates, or seventeen whole plates should be fixed in a pint of such solution.

In an acid fixing-bath, containing three ounces of hypo, together with a hundred and forty grains of sodium bisulphite, to a pint of water, thirty-five quarter-plates, or other sizes in proportion, are as many as should be fixed in each pint.

If the fixing-bath has the following composition, a pint of it may be taken

as capable of fixing fifty-two quarter-plates: hypo, 3 ounces; sodium bisulphite, 140 grains; chrome alum, 48 grains.

In the final paragraph of the paper to which we refer, a method for finding out whether the fixing-bath is or is not exhausted is given. A drop of the solution should be put on a piece of filter or other pure paper, and examined to see if the spot turns a brownish color when it is exposed to moist air and to light for some little time. If it does, the bath should at once be rejected as no longer in a condition to fix a plate properly.

The great importance of this investigation — second to none that its distinguished authors have taken up — must be self-evident. Different makes of plates and different speeds of the same make differ largely in the quantity of the silver salt they contain, while, as it is only that which is not left to form the image which we wish to fix out, the quantity to be removed must vary alike with the exposure, the degree of development and to some extent even with the subject. The denser and more generally opaque the negative, other things being equal, the less there is for the hypo to remove.

But all these questions are ultra refinements; no one in his senses would wish to work his fixing-bath right to the verge of exhaustion, and the paper quoted above will give the photographer a clear indication of the approach of the stage short of which he ought to stop.— *Photography.*

BY MOTOR TO MT. VERNON

C. H. CLAUDY

(Prize Winner — Literary Competition)

WHAT a pity it is that history concerns itself only with events which are deserving of the name, and leaves to imagination only the little happenings, the incidental surroundings, the bits of description which would make the local color of the big event strong enough to resurrect the scene to readers of the pages of the past. True, every anecdote of a great man is cherished as so much gold; but as the years fly on, so many spurious tales are told, so much is put into the hero's mouth that never came out of it, that we doubt with a big incredulity much of this color history when it is fed to us.

We know that George Washington had a coach, and probably four horses to drag it. At Mt. Vernon we can see the stables, and, in the coach-house, what many swear is the original Washington coach, but you may search history from the beginning to the end and never a word will you find regarding the minor travels of that coach. Of course it drove often to Washington, but where is the record of one of those commonplace journeys? And to-day such a record would have an interest. Roads, to-day, are things to be reckoned with — to be gone to and met with pleasure if good, to be avoided and steered clear

C. H. CLAUDY AT MT. VERNON

of if they bear an unsavory reputation. We do not like to be jounced and bounced; we do like to ride smoothly, and we most anxiously inquire, from local sources as well as from guide-books, the state of the roads over which we must run our motor-cars.

Now the particular interest I have in the state of the road from the city of Washington, D. C., to Mt. Vernon, the home of him for whom the city was named, is this. I have been over the road in a motor-car, and I found it so unspeakable as to be literally a disgrace to the state in which it exists, the country which holds the state, and the people who live in the country. If it was as bad when General Washington used it, we should simply be sorry, and argue that without modern methods of both road-making and transportation, all of which he lacked, the state of the road was not to be wondered at. If, on the other hand, the road was better than it is now, the depth of our disgrace becomes too great for words.

I do not mean to say that the road could not be worse. I could easily make a worse road if I tried. I should select a stretch of hilly country, blow a narrow ribbon of it to splinters with a ton of dynamite, sprinkle that stretch with a million boulders weighing from ten pounds to ten tons, fill all the holes with

C. H. CLAUDY ON THE ROAD TO MT. VERNON

mud and water and rest content. I should have made a worse road, I think, though not so very much worse.

Neither do I mean to say that the road is impassable. It is n't, because I got over it, taking the first two motor-cars which ever stood beside the home of the Father of His Country, and brought them back again, and I had a good time doing it, but it was because I expected a hard time and got it, and not because of the roughness, that it was so.

Now this is a matter for some patriotic association to remedy. The Ladies' Mt. Vernon Association has rescued the house and grounds from decay, put everything in apple-pie order, restored everything as nearly as possible as it was in the days when Washington lived there, and they have furnished the house

throughout with old and rare colonial possessions, so that it is almost as it was in Washington's time. There is no more revered spot in the United States than this, the home of the Greatest American, and thousands and thousands of people make the trip every year. They go by boat, down the broad and stately Potomac, or by a shrieking, whizzing trolley-line which gets there in a very short time from the city, but they never go by road unless they are crazy for a new sensation or desire an object-lesson in How a Road Should Not be Built; and to my mind this is all wrong. Good roads are a sign of civilization. Good roads leading to any spot we honor are but courtesy to the dead. Why should the road to the most visited tomb in the United States be the most disgraceful road imaginable? If some one, or some collection of some ones in an association or a society, were to take hold of the thing, and work it up, it might be very possible to get an appropriation from Congress and from Virginia to build a road worthy of the name, but until that time let the motorist beware.

Now I have said my caution at some length. Yet if there be a motorist bent on visiting Washington's home who is not afraid his machine will fall to pieces if badly shaken, who does not object to playing the part of loose pea in the pan, let him take that trip, for it is enjoyable from its very roughness, and the accomplishment is something to boast of after the trip is done.

You start anywhere in Washington, turn south to Fourteenth Street, N. W., and follow the tracks. You turn to the Highway Bridge, instead of the old Long Bridge at the river, and across it you are in Virginia. Here the road lies six miles long to Alexandria, and a sorry six miles it is. Brick carts with heavy loads cut it up, and red clay and black loam, the principal constituents of the country, make a poor material to withstand heavy trucking, so you must straddle mud-holes, run part of the way in the ditch, hold the clutch with the foot all the way and forget your nerves. So may you arrive safely. In Alexandria are many quaint and curious sights, all of which local guides and guide-books can give you, but begin with the church where Washington worshiped — easy to find from its tall red-and-white tower. Enter and you will be shown Washington's pew, and those occupied by other famous men and women, both then and since.

Not being an expert guide to the wildernesses of Alexandria, I will not give you explicit directions for finding the Mt. Vernon Pike (Heaven save the mark!). But it lies to the south and the west of the "city," and any one locally acquainted will tell you the proper street down which you should go to find this afore-mentioned Pike. The Pike is but a memory — a name; no toll-gates now rear their offensive little bars to let the traveler through, no association keeps it in repair, no steady stream of traffic demands a good surface. It is but a strip of cleared land — subject to the wills and evils of the weather, and the no less damaging efforts of the farmer road-worker, and its name is Horror and Nightmare.

We went at it merrily enough, and chugged and tooted along for a short distance without a thought of anything worse than the occasional bump and

rise in life which the Virginia thank-you-ma'am demands on all roads; but we did not know our troubles. Nor would I expect you to believe me had I not pictures to prove it. One of them shows us literally swimming our cars, although you must take my word for it that this stretch of water lasted for a full half-mile. Here, with many an inward sigh and groan, I descended into the dark and muddy deep, camera in hand, to collect my proof. You can see it is water, and wet, and can guess it is muddy, but you cannot feel the cold chilliness of the clammy, mushy mud about my legs, nor understand the cussedness which exuded from the place where cusses usually come from. The worst of it was that the two cars refused to be incommoded by the water, and kept step with each other, their engines never faltering for all the unexpected shower-bath. Hence, I was the only one compelled to get wet, and the loneliness of my misery did not make it any the less. No, I don't suppose the water is always there. I presume, if you will wait until you find a time of the year when it has n't rained for three weeks, that this stretch will be dry; but it is a natural basin and catches the drainings of several fields, and when I saw it, it had all the looks of permanency of the Atlantic Ocean!

There was another stretch of road where the farmers had been paying the road tax, and dumping new metal on it. Now new metal, in the ordinary sense of the word, is crushed stone — wicked on tires, disagreeable to ride over and barbarous any way as a means of repairing roads, but you can get over it. This new "metal" was nothing but clay and dirt from the fields, dumped on anyhow, and left to the tender mercies of those carts which drive over it. The result was that we went *through* the road, not over the surface. Unfortunately for the teller of tales of motor-rides, no picture of a bad road ever makes it appear more than fifty per cent as bad as it really is. Hence, you might be inclined to think the surface troubles exaggerated on looking at the picture I made; but if you were to examine it closely, you would see that it represents sticky mud and not mere dirt. Anyway, it took us half an hour to get over two miles — and that is about the speed of a pedestrian.

Then there was a hill, which we went down in all innocence, just before we arrived at the gate of the Mt. Vernon grounds. It was a decent surface and we coasted. Suddenly I saw something, I hardly knew what, and yelling aloud to the machine behind, we slammed on brakes and made ready to jump. Right on the edge we stopped — the edge of a wash-out, three feet deep, six wide, and all across the road. Had we not seen it in time — and thirty feet away it was invisible — we should have continued our trip, doubtless, but through the air, and the remains of the machines would probably be sprouting there now.

So we hauled logs and fence-rails, built a little bridge, and crawled over, and then we saw the gates and were at rest.

At first it was doubtful if we got into the grounds. No motor-cars had ever tried it before — there was no precedent for such a thing, and undoubtedly we meant some harm some way to some one or something or we would not have tried to come in that unusual way. So apparently argued the custodian; but on

my earnestly representing that we were of peaceful design and only wanted to find out about the road with the hope of getting a better one, and that a picture of the mansion with an automobile in front was a necessity, did he allow us to get in. Even then we had to first walk through the turnstile and pay our money, and then walk back again and take in the cars. And we must keep them very quiet and not make any noise, nor must we go on the grass, and so — although it would have done no bit of harm — we had to go without the picture we wanted most of the autos in front of the porch where General Washington used to sit and watch the river flowing by; but we got some photographs of the other side of the mansion, and they are sufficient evidence that we really made the trip — twenty miles and return — and in six hours. That we returned alive the present story evidences.

It is a rough trip, a bouncy trip, a trip hard on car and man, but a motor achievement. I do not imagine that any words of mine can be directly responsible for any change in that road which may be made, yet some one's work will call it to the attention of those who will do what should be done, and if enough motorists can be got to take the trip and talk about the disgraceful condition of the road, the trick will be turned. Who will next show a picture of his own auto in front of the home of General Washington?

PLACING PRINTING-PAPER ON MATS

DAVID GRAY ARCHIBALD

THE placing of mats on negatives to get white margins on prints is more or less troublesome — the more so if the paper be very near the size of mat-opening through which you are printing. A good plan that works out well in practice is to arrange so that a light shines up through the negative when you are placing the paper. This is easily done, if you have electricity at hand, by simply taking a sheet of ground glass and supporting it on either side with a pile of books. The electric bulb is placed beneath the glass; the printing-frame is laid on this glass as if on an ordinary table, the negative is put in, and then the mask and paper together are placed on top of the negative. You can see, by looking down, just when it is in the right place. When so, hold in position with the thumb and first finger of the left hand and place the back of the frame in place with the right hand.

If you wish, you can expose it thus without moving it, by having the light beneath it sufficiently strong in actinic rays. To make the light non-actinic, put a sheet of yellow glass beneath the other, and withdraw it during exposure.

For gas or kerosene-lamp light you will have to make your light shine through the negative by reflection. This can be accomplished by placing a piece of white cardboard at an angle of 45° between the piles of books and beneath the glass. The light shines on this from one side.

EDITORIAL DEPARTMENT

THE ART OF PICTURE-MAKING

SO much has been preached about the application of art-principles to photographers by well-intentioned speakers, particularly at the yearly conventions of the professional workers, that one wonders at the paucity of the results of these numerous and oft-repeated pleas. "Study the old masters, then you will know how to make artistic pictures!" This is the cry of the convention orator, anxious that his fellow-workers should become artists and partake of the glory reaped by the leaders of *die neue Richtung*. So the busy professional returns home, determined to profit by the sage advice. Straightway he invests in a collection of photographs or other forms of reproductions of the works of great painters and sculptors, and dutifully devotes himself during his leisure hours to the analysis of their merits. With the aid of some good work on pictorial composition he is enabled to discover the underlying art-principles, and naturally supposes that the picture was constructed strictly in accordance with certain laws. This is a mistake many such students make. Most of them — and the fault is not theirs — have no innate love of art, and little intelligent appreciation of what is really beautiful. True, they are attracted by pictures and experience a sense of pleasure in looking at them, very much as children enjoy their picture-books, except that their emotions are stirred, for their understanding and feelings are matured. They might attend art-schools for years and absorb considerable knowledge of the laws of perspective, proportion, light and shade, harmony of line and the rest. All this, however, will not make them artists, unless they are endowed by nature! In that case they will voluntarily be drawn to the sources of truth; no lecturer on art will need to urge them. They will begin young. The spirit of true art will manifest itself in various ways and, at the proper time, trustworthy guides — private teachers or art-schools — will impart the necessary aid to the cultivation of the germ.

The worker desirous to be classed with his really talented fellows must know that true art conceals art, and that when an artist creates his picture or interprets an inspiring theme, he does so without being conscious of rules or precepts. The process is entirely spontaneous. It is the action of the mind guiding the brush or pencil flowing as smoothly as the waters of the brook. The impelling force comes from within and is a part of his natural self. He has a feeling that everything he does is right. When he discriminates in the selection of certain objects in the landscape — he does not reproduce all that is visible to the ordinary eye — it is scarcely the result of deliberate, cold-blooded calculation, but rather that of unrestrained spontaneity. Thus operate his faculties as he instinctively applies the lesson taught him by his master. He absorbed the elements of art — composition, balance, form, etc.— without effort, and in the same manner he puts them into practice. The technical side of his art does not

seem to exist for him, for he scarcely considers it — precisely like the true, inspired musician, as he draws the tones from his instrument. The moment the mind of the tonal artist is filled with the mechanical details of the composition he is executing, the interpretive quality of his playing takes flight, and the performance no longer reflects the spirit of the work. The performer cannot concentrate his faculties upon the intricacies of technique and at the same time commune with the spirit of the composer. He must become so proficient with the resources of his instrument that, in giving full sway to his emotions, he can dismiss all concern of technical difficulties. Then is art supreme. A mere display of technical mastery is not art. It may astonish, but it does not thrill.

One thing the photographer should bear in mind is that no matter how well he may know the rules of art, their mere application will not make a picture. A well-developed æsthetic sense, poetic feeling combined with an intelligent appreciation of the beauties of the scene to be pictured, are indispensable requisites and proclaim the artist. As he wanders through forest and field in search of a subject for his camera, the artist-photographer carries with him no diagram to which a picture must conform. For the time being his mind is not concerned with art-rules. His artistic nature is aroused; his emotions are stirred; and yet he must choose his view-point and secure the proper balance to his picture. In this he is guided by an intuitive sense of what is right. But it will not do to lose himself entirely in the admiration of his subject. The manipulation of the apparatus and timing of the exposure require judgment and a cool head, as we all know. It is well also to keep a watchful eye on stray animals that may or may not be wanted as additions to the landscape. Curious persons or passing teams likewise will claim a share of the worker's attention, and his celestial thoughts are bound to be interrupted and to attach themselves to things material. One shudders in contemplating the awful calamity that might befall the camerist too engrossed in his loving task. Bulls in the field and automobiles on the highway are not always to be trusted.

RATIONAL PORTRAITURE

THIS is not a plea for sane work in photography. It is a waste of words to try to reason with a class of experimentalists — strictly speaking, they are not photographers — who, because of no practical understanding of the art, have ventured to urge upon a patient or indifferent public childish and ludicrous attempts to portray the human face. Happily this species of photographic quacks has had its day, although for a time it made considerable noise. There is talk now of sane methods. Strangely enough, the "fuzzytypist," of whom little now is heard, and whose husky voice will soon be hushed in death, shows no symptoms of conversion to sane methods of technique. Why? Because he is not equal to the emergency. He lacks even ordinary ability. Thus he has vanished, and he is likely never to reappear in any guise.

THE ROUND ROBIN GUILD

Conducted by Elizabeth Flint Wade. Specially designed for the amateur photographer and the beginner. Membership may be obtained by sending name and address to the PHOTO-ERA.

"I Martius am! Once first and now the third!
To lead the year was my appointed place;
A mortal dispossessed me by a word,
And set there Janus with the double face.
Hence I make war on all the human race;
I shake the cities with my hurricanes;
I flood the rivers and their banks efface,
And drown the farms and hamlets with my rains."

Thus speaks March the vindictive, and, though his winds are whistling through the trees, we know that spring is already knocking at winter's door and demanding entrance. So we take heart, even though the rough old month blusters his hardest, for soon he must away and we shall be free to foot it over green hills and down mossy dales.

Many things are planned for the improvement of Guild work. First and foremost, special pains are to be taken with the monthly Guild competitions. Some interesting subjects are on the tapis, as may be seen by consulting the announcement of subjects for competition in this issue.

Another feature of the Guild work to which a great deal of attention will be paid is the Historic Picture Record work, and prizes will be offered for efforts in this direction. Some interesting developments along this line may be expected.

These are only hints of what is in store for the benefit of our Guild, and for its pleasure as well.

We want to add to our membership list, so will the Guild members please do a little missionary work among their friends and ask them to join? No fees, no dues. The name and address of the amateur is all that is required.

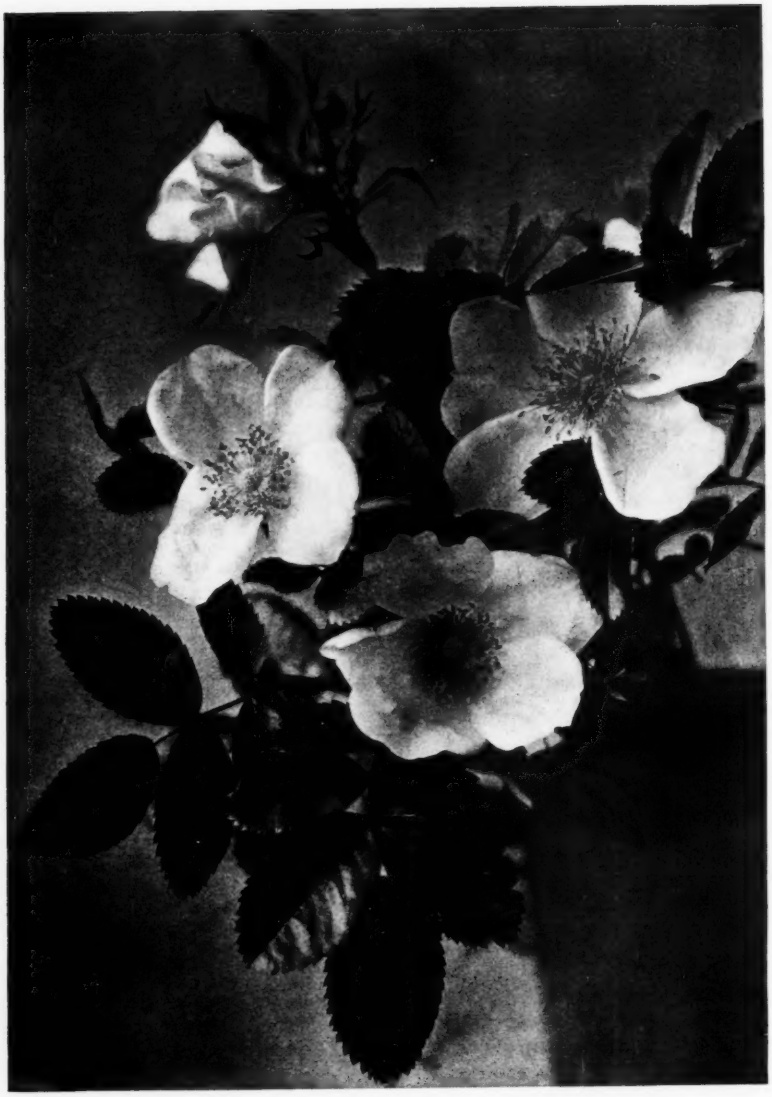
This is to be our record year in all departments.

LANTERN-SLIDES WITH PEN AND INK

When making a series of lantern-slides it often happens that a desired illustration cannot be made in the camera. In such a case the clear crystal cover-glass may be utilized by coating it with varnish and drawing the picture directly on the prepared surface with a drawing-pen and waterproof ink. The varnish which is very transparent is made of one-fourth ounce each of gum sandarac and gum mastic, ten ounces of sulphuric ether, and two ounces of benzole. The glass is flowed with this solution and dried in a place free from dust. It gives a matt surface which takes pen and ink readily. Every imperfection in the glass is highly magnified on the screen, so in drawing be careful that the lines are not blurred and do not overlap. The drawing is simply in outline, the lines suggesting rather than portraying the picture. If it is desired to preserve the picture indefinitely, then after the drawing is dry flow over the surface of it a varnish made of one-fourth ounce of gum sandarac and gum mastic dissolved in eight ounces of sulphuric ether. Any one skilled in the use of a pencil can make very clever slides as directed.

SENSITIZING POSTALS

For the amateur who wishes to sensitize his own postals, a sensitizing-solution may be bought ready prepared which is easily and quickly applied to any smooth surface, and which when dry makes a very good print. It is in black and white when



WM. C. STARR
FIRST PRIZE — FLOWER STUDIES

D. H. BROOKINS FIRST PRIZE — RAINY DAY SCENES

finished, and is simply developed in water, then fixed in hypo. It is almost as cheap as the blue-print solution, and if prints are made from good negatives they are very pretty souvenirs.

ROUND ROBIN GUILD COMPETITIONS

First prize: Value $10.00.
Second prize: Value $5.00.
Third prize: Value $2.50.

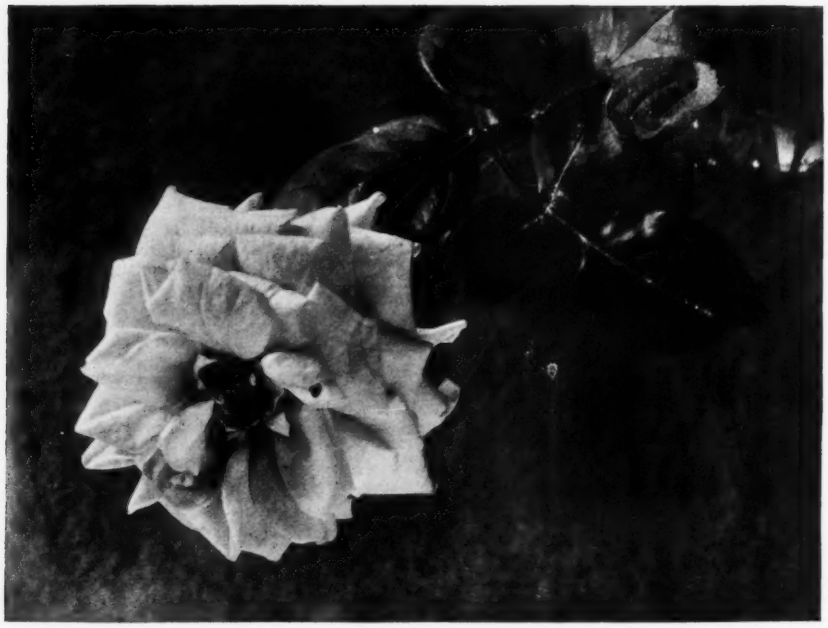
Prizes may be chosen by the winner, and will be awarded in photographic books or magazines published or advertised by us; in enlargements, art portfolios of photogravures, mounts or other photographic materials advertised by us, or, if preferred, we will send any article of a photographic or art nature which can be bought in Boston for the amount of the prize won.

RULES

Membership in the Round Robin Guild, with all its benefits — among which the correspondence privilege probably stands first — is free to all, and we invite every photographer to become a member. Entrance in the monthly competitions is also free to all, whether subscribers to PHOTO-ERA or not.

SUBJECTS FOR COMPETITION

February — "Post-cards." Closes March 31.
March — "A Windy Day." Closes April 30.



MRS. G. L. GILBERT — SECOND PRIZE — FLOWER STUDIES

April — "A Showery Day." Closes May 31.
May — "Nocturnal Photography." Closes June 30.
June — "Interiors, with Figures." Closes July 31.
July — "Landscapes." Closes August 31.
August — "Waterscapes." Closes September 30.
September — "Sunsets." Closes October 31.
October — "Windows and Doorways." Closes November 30.
November — "Genre Studies." Closes December 31.
December — "Home Portraiture." Closes January 31.

AWARDS — FLOWER STUDIES

First prize: W. C. Starr.
Second prize: Mrs. George L. Gilbert.
Third prize: Charles Tracy.
Honorable Mention: Mrs. H. A. French, M. E. Baumberger, W. E. Bertling, R. A. Buchanan, A. R. Hutten, George G. McLean, Grace E. Mounts, Mrs. J. L. Pike, Miss E. Brook Poole, Edmund H. Royce, Wm. S. Rice, Miss Florence Marie Roberts, Jno. M. Schreck, Wm. Spanton, Robert M. Storms, Mrs. E. E. Trumbull, U. LeRoi Upson, Harry D. Williar, G. Wallace Williams, Gilmer Winston, A. Eleanor Woodside.

AWARDS — RAINY DAY SCENES

First prize: D. H. Brookins.
Second prize: F. A. Fairbanks.
Third prize: Madison Phillips.

AWARDS — SNOW SCENES

None of the Round Robin Guild monthly contests has brought forth more entries of a better quality of work than that devoted to snow scenes, which closed January 31. Although a higher standard of excellence, both technically and artistically, was struck than ever before in the history of the Guild, it is a much more pleasing duty to record the fact that these

excellences did not apply to the work of a few, but characterized practically the entire collection of prints submitted. It was, therefore, no mean task to award the prizes.

We are greatly interested in watching the progress Guild members are making in pictorial perception, as well as in handling their favorite medium of expression, and, as the monthly competitions are the visible indication of this progress, we are much pleased by the increasing attention which this department is receiving. We hope that every Guild member will do his part toward making these contests a success, thereby deriving the benefits which accrue from honest competition.

First prize: W. H. Evans.

Second prize: Lewis P. Craig.

Third prize: James S. Escott.

Honorable Mention: Wm. Wheelock, Chas. Vandervelde, Geo. S. Lynn, Paul Fournier, W. E. Bertling, R. E. Weeks, Mrs. George L. Gilbert, W. E. Baumberger, Harry D. Williar, L. M. Reigtmeyer, Mrs. H. R. Davis, W. L. Andrew, O. E. Kennedy, M. A. Yauch, Mrs. A. F. Turner, W. L. Dubois, Mrs. E. E. Trumbull, D. H. Ruse, Louis R. Murray, H. E. Stout, J. E. Mars, H. D. James, W. F. Kuehl, Miss Susie Cummings, Maud S. Lee, F. J. Youngblood, E. D. Leppert, M. E. McDougall, Mrs. G. J. Hawes, Carl W. Daines, Russell Wherrett.

PORTRAIT PHOTOGRAPHY

The amateur who essays portrait-photography — a phase of the art at once the most fascinating and the most difficult — should know something about lines and curves, understand the value of shadows, and know what to suppress and what to bring into prominence. He must produce in monotone what the painter does with colors — a really artistic picture.

The ideal room for portrait-photography is the same as that chosen by the painter, a room on the third or fourth floor, or even higher, with a north light. The reason why a painter chooses the north light is because it is a more even light, and does not fluctuate as does the light in a room where the sun shines into it some portion of the day.

Most of us cannot command such a room, and we must learn the possibilities and limitations of the one at our disposal. With white reflectors and properly adjusted screens one can secure almost any sort of lighting he desires, and, with care in manipulating his camera, obtain excellent results.

If one has studied portrait work, then he is already well fitted to practise portrait-photography. If such is not the case, however, then his best plan — lacking a teacher — is to buy photographs of some of the best works of the masters of portrait-painting and study well the posing and lighting of the subjects. Then with a certain picture as a model, choosing at first the most simple, both in composition and lighting, pose the subject and endeavor to have the lighting correspond as nearly as possible with that of the study chosen. If the first attempt is not successful — and the chances are that it will not be — then try another and another from the same study until the result approaches in some degree the model.

For the beginner in portrait-work the most pleasing results will be obtained if the face is turned away from the light, as the shadows give softness and roundness to the features. If the head is turned to either side care should be taken that it is not turned so far as to bring the muscles of the neck into prominence, as the effect is very unpleasant. The lighting of the face should be so adjusted that the lights and shadows seem to melt and blend into each other with no sharp definition between. This effect is termed the proper gradation of lights and shadows, and this treatment of the lighting distinguishes between the photographer with and the photographer without artistic training.

The hands are perhaps as difficult a part of portrait-photography as one encounters. They should be kept in shadow as much as possible, and in posing, the side, instead of the back, of the hand should be turned toward the camera. One should never try to arrange the hands of

LEWIS P. CRAIG SECOND PRIZE — SNOW SCENES

a subject. If the position of the hands does not seem pleasing, ask the subject to lift them and drop them again in the lap. The muscles of the hands when at rest should be relaxed, but the sitter before a camera is all too prone to hold his hands stiff and rigid. The fingers should seldom if ever be doubled or shut, as it gives the effect of stubbiness to even the most slender hand. Sometimes it is a good idea to use a book or a small picture in the hand, choosing for the book a small volume with rough leaves in yellowish tones. The picture should be on a rough mount of dull gray or deep cream. Where use is made of a book with shiny leaves it gives a strong high-light where a high-light is not desired. The light is always concentrated as much as possible on the face, the figure and accessories being subordinate in tone and decorations.

The sitter should not be allowed to look straight into the camera. The focus of the eyes on an object so near detracts from the expression, and the result is not so pleasant as when the sitter looks beyond the camera at some distant object.

The dress of men and boys has little of the artistic, but the dresses and draperies of girls and women are full of artistic possibilities. One point to remember is that the simpler the dress the more artistic will be the picture. If one wishes to make a picture which shall not lose its

JAMES S. ESCOTT — THIRD PRIZE — SNOW SCENES

charm in after years, then use a very simple gown, and have the hair dressed loosely and in none of the exaggerated fashions of the moment.

In focusing for a portrait use one of the largest, if not the largest stop, focus on the eyes, then turn the lens outward just enough to do away with the sharp focus. The exposure varies with the light and with the rapidity of the plate. On an ordinarily bright day, with quick plates, an exposure of five seconds is quite long enough, but if the day is dull or the sitter placed some distance from the window, the exposure should be prolonged to from fifteen to thirty seconds.

Do not make your subject wait too long. Have everything in readiness, and work quickly. If one spends too much time in arranging and rearranging his accessories and posing and re-posing his sitter, both operator and sitter will become tired and the picture will be a failure.

Never being satisfied with one's work is the way to advance; though you do well, do not give up the idea that you can do better.

DEVELOPER FOR TRANSPARENCIES

The following formula for hydroquinone developer produces very clear and brilliant transparencies. It is also a fine developer for negatives where good strong contrasts are desired.

Water	20 ounces
Hydroquinone	60 grains
Sulphite of soda, crystals	½ ounce
Bromide of potassium	6 grains
Dry carbonate of soda	1 ounce

Mix in the order named, and use without diluting. This developer may be saved and used for over-exposed plates, as in the used form it controls development and produces the desired contrast which an over-exposed plate lacks, and which is hard to obtain by any after-treatment when developed in the ordinary way.

W. H. EVANS

FIRST PRIZE — SNOW SCENES

F. L. T.— Back numbers of THE PHOTO-ERA may be purchased at the PHOTO-ERA office. Some of the early numbers are out of print, and on some special numbers the price has advanced. If you will write just what numbers you desire, word will be sent you if they are in stock, and at what price they may be procured.

W. W. ROBERTS.— Halation is a term used to denote "local fog." It occurs in photographs of interiors where windows are included in the pictures. It often occurs in landscape-views around the foliage of trees that are outlined against a sunny sky. In making interior views one should use double-coated non-halation plates and avoid the fog or blur which is present when ordinary sensitive plates are used.

W. CLARK.— Your prints which have become yellow may be restored by placing them for a few minutes in a ten per cent solution of ammonia, or they may be bleached in a weak solution of bichloride of mercury. As soon as the yellow tone has disappeared, wash the print thoroughly, fix it in hypo — 1 to 10 — and wash again. If you have the negatives it would be wiser to make fresh prints, rather than to undertake to restore the yellowed ones.

F. G. CHARLES.— A formula for paste that will not cause the print to curl or cockle is made of gelatine — four ounces dissolved in eight ounces of water. Strain and add one-half ounce of glycerine and one ounce of alcohol.

ELLEN M.— The prints which you enclose are evidently made from a much over-exposed plate. There is really no way of obtaining better prints from such a plate than the ones which you have made. The advice of the editor would be to throw away a plate of this description and either make a new negative or, if the negative is not obtainable, console yourself as well as possible for the loss. In future experiences of the sort, take special care not to over-expose, but if over-exposure occurs, treat the plate in developing according to directions already given several times in this department and you will obtain a fairly good plate.

E. G. H.— If the nitrate of silver solution has turned brown, filter it through two or three thicknesses of filtering-paper and it will clear. Any solution not in daily use should be protected from the air by immersing the top of the bottle in melted paraffine or turning melted wax over the cork and lip of the bottle.

MERTON G.— A print for reproduction should be made on glossy paper, as it gives better results in the half-tone reproduction than if made on the matt surface papers, like Velox and platinum, even if in black-and-white tones.

D. L. OVERTON.— The price of photographs for illustration varies with the subject. If of special interest, such as pictures of catastrophes or of current pictorial events, the price is much higher than for pictures of more circumscribed interest. Then, too, each paper or magazine has its own rate of payment, and for what one might be willing to give ten dollars, another would think two dollars a good price. THE PHOTO-ERA published at one time a list of papers conducting prize contests, and those which were a good market for photographs. We expect to resume this feature of the magazine at an early date.

CAROL D. C.— In printing from your thin negatives try placing the frame at the bottom of a box eight or ten inches deep, or print through ground glass. This retards the printing process and gives depth of tone, which the print made in direct sunlight lacks. Intensifying your negatives will help the printing-results.

BERTHA B.— If you are looking for the picturesque, why not visit the markets in your own city some busy market-day? You will find many interesting studies, and if you want a bit of foreign flavor in your picture do not omit the Polish market, where strange and curious people meet to buy strange and curious things. A market in most large cities well repays the visit of the amateur, for the vendors are themselves most interesting types of people.

LANTERN-SLIDES IN COLOR

ALTHOUGH we usually think of a lantern-slide as being in black and white, it frequently happens that pictorial qualities may be enhanced by the employment of color. A beginner in this interesting branch of work should first become proficient in making black slides, after which he may properly turn his attention to the production of color effects.

There are two distinct methods of altering the tone of a lantern-slide: it may be developed out with a colored image, when a permanent result is obtained, or it may be developed out black in the ordinary way, and the image converted by toning into one composed of an altered chemical compound with a changed color. As permanence is the *sine qua non* of all photographic processes, especially in the case of lantern-slides, because the conditions to which they are subjected are far more trying to their stability than those to which prints are usually exposed, it is surprising that so little advantage has been taken of the first-named method.

DEVELOPMENT METHOD

By slightly over-exposing a chloride or chlorobromide plate, and using a suitable solution for its development, it is possible to obtain red, yellow, mauve, sepia and brown tones; these may be toned by means of a gold bath, and a bright blue result produced. As far as chemistry can tell us, all such results are unalterable, especially as the film is generally protected from atmospheric influences by the cover-glass. The production of these colored images is a purely physical process; it is difficult to explain how the silver image can be obtained in such a variety of tones, but probably only partial reduction of the original salts takes place. It is certain, however, that if the image be slightly warm instead of black it is readily amenable to treatment with a gold bath, and thus we have a still further variety of colors at our disposal.

Where several slides are to be made, the easiest way to obtain bright red tones is by slight over-exposure and very weak development with hydroquinone and caustic soda. A good developer for dilution in this way will be found as follows:

A

Hydroquinone	15 grains
Potassium metabisulphite	15 "
Potassium bromide	3 "
Water	4 ounces

B

Caustic soda	20 grains
Water	4 ounces

Ten per cent bromide solution is also necessary, as it is desirable to vary the quantity of restrainer to produce the differences of tone. The exposure should be given to daylight, and may vary from two to twenty times the normal, more bromide being added to the developer as exposure is increased. As a typical example, we might take the following. Fifty seconds' exposure is given to a plate under a medium negative to diffused daylight (i.e., not direct sunlight). One ounce each of A and B are mixed together, and ten ounces of water and a few drops of bromide solution added. In very weak gaslight the development may now be carrried out; but as it will take perhaps twenty minutes or longer, it is as well to do several at once.

A few trials will enable one to find out to what extent exposure must be increased and the developer diluted in order to give a desired color, and if several slides are wanted, all of one tone, identical results will be obtained by giving the same time of exposure and development. Half a dozen plates may be placed in an 8 x 10 dish, covered with developer, and left to develop up at leisure, being examined perhaps every five or ten minutes.

It is a singular thing that, provided the image obtained by development is at all warm in color, it may be toned by a gold bath; a red slide, if placed in the combined toning and fixing bath instead of ordinary hypo, will assume a chocolate tint during fixation. But beautiful deep blue and violet colors may be got by toning a red or warm-black slide, after it has been fixed and *thoroughly* washed, in some such bath as the following:

Ammonium sulphocyanide	30 grains
Water	10 ounces
Gold chloride	2 grains

A short washing after being toned is sufficient to make the slides permanent.

TONING-METHODS

Despite the straightforward nature of the operations, the certainty with which they may be carried out, and the inexpensive nature of the development process, the majority of workers prefer to get a good black-tone slide, and alter it to a brown, green or blue by means of uranium or iron toning-baths.

Assuming that a black image has been obtained in the ordinary way upon either a bromide or chloride lantern-plate, this plate may be converted into a colored picture by causing a deposition of some metal upon the reduced silver of the image, or by converting it into a compound substance by means of some metallic salt.

There are four chief colors which may be imparted to the black slide, though a large number of tints may be obtained which we class under one or other of these heads: red, including orange, red, sepia, etc.; blue, including bright blue, dark blue, greenish-blue; green, including bluish-green, dark green.

Two solutions only are necessary, and they are made up as follows:

A

Uranium nitrate	30 grains
Potassium ferricyanide	25 "
Acetic acid	5 drops
Water	6 ounces

First dissolve the uranium, then add the other chemicals; shake well from time to time, keep for a week, and filter. The filtered solution keeps indefinitely in the dark, or in a deep orange-colored bottle.

B

Ferric-chloride	15 grains
Water	3½ ounces

The one thing essential to success is to use a thoroughly-washed black-tone lantern-slide absolutely free from hypo.

A gives all red tones, according to length of immersion. When of the desired color, the slide must be placed in a two per cent solution of ammonium sulpho-cyanide until the whites are clear, and then thoroughly washed.

If now placed in B for a few moments, rinsed and dried, a green tone will be obtained. Longer immersion produces green-black tones, and finally blue. If a bright blue color be desired, it is only necessary to rinse a slide when toned with B after A in very dilute nitric acid.

There we have the whole method in a nutshell, so to speak; columns of writing are quite useless, as a few simple experiments will show the reader what a variety of colors can be obtained when the operations are carefully carried out with the baths given.

It must be remembered when making green or blue slides, by using the B solution after treatment with A, that in drying, the color becomes much "bluer;" hence for a greenish-blue tone we must wash and dry the plate some time before it has reached the particular shade we desire to have in the finished picture.

A SCREEN FOR ACCURATE FOCUSING

If accurate focusing is necessary, it will be found that the ordinary ground-glass has too much grain to permit of the minor details being readily seen. The apparent grain may be greatly reduced by applying oil, vaseline or glycerine to the ground surface. Only enough should be used to give the glass a trifle more translucent effect. This method will be found of service in focusing dimly-lighted interiors or copying dark pictures.

A LEGITIMATE USE OF THE PINHOLE

In the autumn, winter and early spring the irritating effect of a network of leafless twigs in the middle and extreme distance is often a source of annoyance to the worker striving for pictorial effect. This is especially true in clear, fogless weather, and at such times he can, with benefit, bring to his aid a pinhole in place of a lens, the result being breadth and a greatly-subdued effect. Although exposure will be much longer than with a lens, it should occasion but little trouble even in windy weather. An occasional puff of wind can hardly be expected to disturb the branches for more than one in twenty seconds, and this will not matter. If the gusts of wind are longer and more frequent, it is an easy matter to stop exposure during such periods and resume afterwards, until sufficient time has been given.

LONG EXPOSURE IN WINDY WEATHER

How frequently it happens that an exposure of several seconds is desirable when the wind is blowing in such fitful gusts that the trees are kept almost continuously in motion. It may not have occurred to the tyro that by careful observation he can find periods of a second or half a second when the branches are at rest. It is, therefore, an easy matter to break up an exposure of, say, five seconds into ten exposures of one-half second each.

AN UNBREAKABLE FOCUSING-SCREEN

Did you ever unpack your view-camera and find the ground-glass broken and no substitute at hand? To avoid such an exasperating contingency it is a good plan to carry in the camera-case a piece of rollable, transparent celluloid, previously flowed over with the following ground-glass varnish:

Gum sandarac	90 grains
Gum mastic	20 "
Ether C. P.	2 ounces
Benzole	1 ounce

LENS STAINS

Old lenses frequently show traces of peculiar colored stains which appear to be in the glass itself. These are due to the Canada balsam between the glasses of the lens. The average photographer can easily remove them himself, but if the lens is an expensive one it will be safer to have a lens-maker take the matter in hand. Remove the lens from its cell and place it in lukewarm water for five minutes or so, and then add more hot water gradually, so as to give the glass ample time to warm up and prevent cracking. After a while the glasses can be separated easily and should be cleaned with methylated spirit or ether, polished and recemented together again by placing some Canada balsam in the concave lens and pressing the convex down on to it, using heat, if necessary, to obtain close contact, and then cleaning off excess and putting into the cell.

RESTORING FADED PRINTS

Old prints which have faded after many years' exposure to the light may be restored in accordance with the directions given below. Bleach the print in the following solution:

Potassium bichromate	1 ounce
Common salt	½ "
Hydrochloric acid	1 dram
Water	30 ounces

After the print is bleached, wash thoroughly and develop with hydroquinine and wash again.

MOONLIGHT EFFECTS

To produce so-called moonlight effects, use a yellow filter and rapid isochromatic plates. Photograph against the sun at a time when it is partially behind a cloud, calculating the exposure as if for a sea-and-sky view. Do not over-develop, or the highest lights of the white clouds will be blocked up. Print much deeper than usual, and if unusual effects are desired the paper may be stained to a greenish-blue with aniline dyes or a ferrous salt and potassium ferricyanide.

PHOTOGRAPHING DRAWINGS WITHOUT A CAMERA

FOR copying small but elaborate drawings like Patent Office drawings, says a writer in the *American Machinist*, there is probably no method so quick, accurate and cheap as the following. Procure a photographic dry-plate of the size required (8 x 10 is usually large enough for Patent Office drawings, the rest of the sheet being taken up by margins, title and signatures). Place the drawings and plate in a printing-frame, the drawing with the back side out, so that the lines will be in contact with the film on the plate. This must be done in a dark room. Expose the frame to dim daylight for a period of, say, five seconds, at a distance of about ten feet from a north window, or one through which the sun is not shining. Develop with the following :

No. 1. Hydroquinone Solution.— (*a*) Water, thirteen ounces; sodium sulphite crystals, one ounce. (*b*) Water, two ounces; sulphurous acid, one-half ounce (not sulphuric).

Add solution (*a*) to (*b*) slowly, then add: Hydroquinone, one hundred grains; potassium bromide, thirty grains.

No. 2. Alkali Solution.— Water, five ounces; sodium carbonate (dried), one-half ounce; potassium carbonate (dried), one-half ounce.

To develop, mix three ounces No. 1 with one ounce No. 2.

If the exposure has been correct the development will proceed slowly until the background is as black as ink, the lines remaining clear white in the negative. Fix and wash as usual.— *The Photographic News.*

STAINS ON DEVELOPMENT-PAPERS

YELLOW spots are a source of great annoyance to beginners in development-paper work. Careful observance of directions, cleanliness and system in the process of developing and fixing, will obviate this difficulty, but stained prints need not be thrown away. Place them in the following solution:

Water	8 ounces
Powdered alum	½ ounce
Sulphuric acid	½ dram

If the prints have just been made the stains will disappear almost immediately, while old prints require only a few seconds' immersion in the solution. After this treatment rinse and dry.

WATER-PROOF GLUE

WATER-PROOF glue is frequently of service to the amateur worker, and it may be made of one part India-rubber to three parts gum shellac. Each should be dissolved in a separate dish of ether, free from alcohol, by supplying a gentle heat. When quite dissolved, the two solutions should be mixed and kept for a time in a bottle tightly sealed. Glue of this nature resists the action of either hot or cold water and many acids and alkalies.

NOTES AND NEWS

LANTERN-SLIDE MAKING

ONE of the most practical, as well as the most popular, numbers of THE PRACTICAL PHOTOGRAPHER SERIES is "Lantern-Slide Making," from which "A Practical Introduction to Lantern-Slide Making" by Rev. T. Perkins, M.A., is quoted. This handy volume tells, in an interesting way, what a good slide should be, and how it may be obtained. From a suggestion of the kind of negatives required, the reader is taken through the various stages, such as exposure, printing optically and by contact, development, clearing, intensification and reduction, drying, masking, binding, spotting, toning, coloring, combination cloud-printing and many other valuable pointers. Every photographer who does lantern-work should own a copy of this book. We can supply copies at 25 cents each, post-paid.

TOILET POWDER

THERE is no toilet article in the selection of which greater care should be used than a toilet powder.

In these days of imitation and substitution there is so much of inferior goods on the market that it is necessary to be continually on one's guard. Highly-scented toilet powders are so frequent as to be a continual source of danger. Such inferior products will often do a permanent injury to a delicate skin. It is far wiser never to take chances with an unknown article. Be sure, rather, to insist upon a trade-marked product of recognized merit. With toilet powder, as with most other lines of goods, it is safer to trust an old-established house with years of experience and reputation for making only the best. Mennen's Toilet Powder is a trade-marked article, which has for years been recognized by physicians as the best preparation made. The absolute purity of its ingredients and the exercise of the greatest care and skill in its manufacture have given the product of the Mennen Co. a quality of uniform excellence. That is why your physician recommends it.

For your protection, Mennen's face (the trademark of the Mennen Co.) is on the cover of every box of the genuine.

All first-class dealers carry Mennen's Toilet Powder and will supply it if you insist. It is supplied by the Government for both Army and Navy.

AN EXHIBITION OF MODERN PHOTOGRAPHY

A NOTABLE exhibition of modern photography, arranged by Baron A. de Meyer and Alvin Langdon Coburn, was held at the Galleries of the New English Art Club, 67A, New Bond Street, London, England, from January 28 to February 9. In all, one hundred and twenty-eight prints were hung, representing the work of J. Craig Annan, Alvin Langdon Coburn, F. Holland Day, Robert Demachy, Gertrude Kasebier, A. de Meyer and C. Puyo. Among the twenty prints shown by Mr. Coburn were his well-known portraits of Henry James, George Bernard Shaw and M. Auguste Rodin.

WYOMING VALLEY CAMERA CLUB

ENTRY-BLANKS have been issued for the Sixth Annual Exhibit of the Wyoming Valley Camera Club, Wilkes-Barre, Penn. The jury of selection is to consist of William H. Walker, Arthur W. Dow, and Edward Penfield. Any further information may be had from R. L. Litch, Secretary, 72 North Franklin St., Wilkes-Barre, Penn.

GOLD AND SILVER MEDALS FOR A COMPETITIVE EXHIBITION OF GENRE PICTURES

Offered by the Grit Publishing Co., Williamsport, Penn.

CONDITIONS OF THE CONTEST

To stimulate art photography, the Grit Publishing Company, of Williamsport, Penn., offers a gold and a silver medal for photographic art studies, in a competition open to professional and amateur photographers of the United States and Canada, entries to be made through the Photographers' Association of Pennsylvania and exhibited at the Association's exhibition to be held at Williamsport, Penn., Apr. 23–25, 1907.

Subjects — Choice of subjects shall lie with contestants, the only limitation being that photographs shall be "life" studies; that is, contain as the principal figures one or more men, women or children. It may be suggested, however, that the photographs tell stories easily to be understood, illustrate familiar adages, sayings, phrases, or be emblematical or typical; in other words, what are known as genre pictures. But the treatment must be original in every way, so that the pictures possess artistic individuality, and be in every sense the work of the artist competing.

Size — The minimum dimensions of negatives have been fixed at 8 x 10, smaller negatives operating to the disadvantage of artists who desire strength of detail as well as prominence of principal figures. This limitation excludes enlargements, which are always unsatisfactory from the critical standpoint. The maximum dimensions are at the option of competitors, who are best able to judge of size necessary to produce subjects most effectively.

Printing — Prints may be made on any paper selected by contestants, but every detail should be brought out in the print. The aim should be to show the merits of the work to best advantage.

Mounting — Mounts are wholly optional with contestants, those most effective being especially desirable. While tastes in this direction will be appreciated, mounting, beyond certain essentials, will have no weight in awarding prizes. Photographs may be framed, but without glass.

Entries — Contestants shall enter their photographs, three in each and every entry, by sending written notice on or before Apr. 20, 1907, to the Secretary of the Photographers' Association of Pennsylvania at Williamsport, Penn., to whom their pictures should be sent, express prepaid, such notice giving subjects, size, kind of prints and full address of contestant on blanks previously secured of any officer or member of the Association; or of Grit Publishing Co., Williamsport, Penn. A duplicate notice shall also be sent to Grit Publishing Co., to which must be given first option to purchase, at prices mutually satisfactory, any picture entered in this competition.

Exhibition — Pictures regularly entered will be hung as advantageously as possible by the officers of the Association, in space provided for this contest.

Prizes — The prizes for this contest will be: first, one gold medal, suitably designed and engraved, actual value fifty dollars; second, a silver medal, suitably designed and engraved, actual value twenty-five dollars. These medals will be given by Grit Publishing Co. to the contestants awarded first and second prizes respectively. (If cash is preferred, the equivalents in gold money will be given.)

Awards —Awards will be made by a committee consisting of three judges of the Photographers' Association of Pennsylvania and two named by Grit Publishing Co., all well qualified to pass upon the merits of photographic art studies. Awards in this contest will be made before the opening of the convention. This rule will be strictly enforced.

This contest in photographic art studies has the approval and hearty co-operation of the officers of the Photographers' Association of Pennsylvania, who appreciate the generous spirit of encouragement to photographers given by Grit Publishing Co., and have pledged themselves to do all in their power to make the competition a success.

For further information concerning entries, apply to E. E. Seavy, secretary of the Photographers' Association of Pennsylvania, New Castle, Penn., previous to Apr. 20, 1907.

PHOTOGRAPHERS' ASSOCIATION OF AMERICA

THE Executive Committee of the Photographers' Association of America met in executive session at the Beckel Hotel, Dayton, O., Jan. 22, 1907, to arrange for the Twenty-seventh Annual Convention, all officers present. C. J. Van Deventer, President; C. L. Lewis, First Vice-President; A. T. Proctor, Second Vice-President; F. R. Barrows, Treasurer; Frank W. Medlar, Secretary.

REPORT OF SECRETARY

Received on old accounts	$24.50
for floor-space, 1906	1,830.00
for desk-space, 1906	223.00
for advertising, 1906	691.00
for all other privileges, 1906	32.00
	$2,800.50
Paid to F. R. Barrows	2,800.50
Outstanding accounts	52.50

TREASURER'S REPORT

Cash on hand Jan. 1, 1906	$4,818.54
Received from secretary, 1906	2,800.50
Received from memberships and dues	2,463.00
Sale of ladies' pins	47.25
	$10,129.29
Paid out on Vouchers Nos. 583 to 660	5,757.55
Balance on hand Jan. 1, 1907	$4,371.74

President Van Deventer appointed C. L. Lewis and A. T. Proctor to audit accounts of secretary and treasurer, which were found correct, and approved.

It was decided that the Twenty-seventh Annual Convention of the Photographers' Association of America be held August 6, 7, 8 and 9, in the Steele Educational Building, Dayton, O.

From the numerous letters received, the consensus of opinion was not in favor of prizes, which guided the Board in their decision to offer no prizes the coming year. However, these opinions were not averse to recognizing merit in any other way than by giving prizes of intrinsic value.

The unusual interest manifested in the last Salon Exhibit has led the Board to continue this feature at the Dayton Convention, but it is to be understood that the twenty-five pictures so selected are not to be rated, all honors to rest equally on pictures so selected. A Certificate of Award will be given to all receiving Salon Honors.

In compliance with a resolution passed at the Niagara Falls Convention, the Association this year offers $100 in gold to be awarded to the manufacturer or dealer exhibiting the best invention, appliance, formula or process, not heretofore shown at a National Convention; and in addition thereto will give $50 in gold to the *inventor* of such, as the case may be, provided he be other than the party exhibiting same.

It was decided that $200 be placed at the disposal of the Entertainment Committee, to carry out plans maturing for the entertainment of members.

The board ordered that official ballot-slips be used in the election of officers, and that no other than this official ballot be recognized.

RULES AND REGULATIONS

1. Exhibits may be framed or unframed, at the discretion of the exhibitor.

2. Exhibits shall consist of two classes — Salon and Complimentary.

3. The Salon class shall consist of salable portraits. The exhibitor shall be prepared to affirm that his negatives were made for a *patron and prints sold therefrom.*

4. The exhibit shall consist of not less than three nor more than six pictures, only one of which may be selected for Salon Honors.

5. In the Complimentary class, exhibitors are requested that their exhibits shall not exceed twelve prints. No other restrictions.

6. Application for space in the Art Department shall be made to C. L. Lewis, 1217 Madison Ave., Toledo, O., First Vice-President Photographers' Association of America.

7. All exhibits must be sent *prepaid* to C. L. Lewis, First Vice-President Photographers' Association of America, care of Steele Educational Building, Dayton, O., and must reach Dayton, O., on or before Aug. 1, 1907.

Any exhibits not received by August 1, or on which all charges are not *prepaid, will not be accepted.*

8. The Association will not be responsible for any loss or damage to pictures while in its charge, but special precaution will be taken to assure the safe return of all exhibits intrusted to its care.

9. *No exhibits shall be removed from the hall until after the close of the Convention.*

Exhibitors who desire to personally take charge of the removal of their exhibits *may do so only* by permission of C. L. Lewis, chairman of the Hanging Committee.

10. Box-covers must be fastened with screws (not nails), and the exhibitor's home address *must be* on the under side of the cover, to insure the safe return of exhibits.

11. To become a member of this Association, one is required to pay to the Treasurer $5.00, $3.00 of this sum is the membership fee, and $2.00 dues for current year.

To retain one's membership the annual dues of $2.00 must be paid yearly.

12. Employees are required to pay only the dues of $2.00 to become members of the Association, but must bear a letter of endorsement from their employer, or be identified by two active members of the Association.

Bausch & Lomb-Zeiss TESSAR

HOME PORTRAIT
By C. R. TUCKER, New Dorp, Staten Island, N. Y.

HOME PORTRAITS

are impossible at this season of the year—without a lens of great speed and the highest optical corrections. Such a lens is

TESSAR

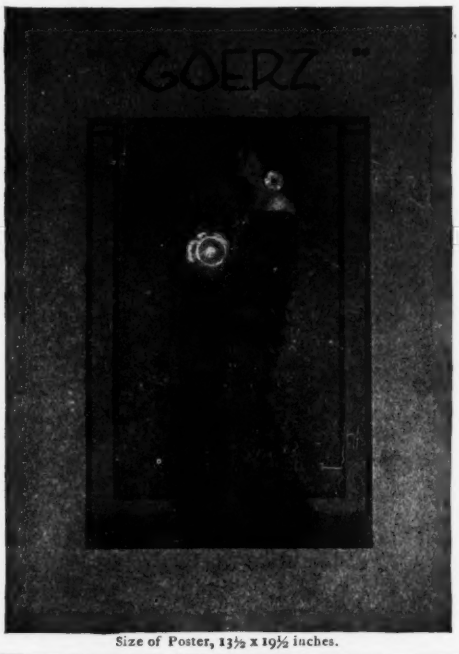
Note in the accompanying illustration the naturalness of the pose, and note also, please, the kitten. Have you ever tried to photograph a cat? If you have you know that this photograph was instantaneous. When you can do work like this *in the house*, and also the finest of landscape, architectural and out-of-door instantaneous work, it is worth while to pay a little more for the lens.

Send for beautifully illustrated new booklet "Home Portraiture."

Bausch & Lomb Optical Company

ROCHESTER, N. Y.

NEW YORK *BOSTON* *WASHINGTON* *CHICAGO* *SAN FRANCISCO*



Size of Poster, 13½ x 19½ inches.

Just Out!

The GOERZ Catalogue for 1907

THIS splendid General Catalogue with its magnificent Prize Cover, a reproduction in two colors and gold, from Ed. I. Steichen's original gum print winner of the Goerz Catalogue Cover Competitions, (1905) will be sent on request against remittance of 9 cents in stamps to cover postage.

¶ The Catalogue gives full particulars on all Lenses, Cameras, Binoculars and other goods manufactured by this Company. It comprises 64 pages of text, profusely illustrated, a collection of valuable lens formulae and short cuts, one beautiful photogravure (a reproduction of one of Radcliffe Dugmore's celebrated animal pictures) and fifteen fine half-tone reproductions "hors texte."

¶ In answer to numerous requests from artists and art lovers, the C. P. Goerz American Optical Co. have decided to publish a limited issue of 250 reproductions from Mr. Steichen's Prize-Winning Catalogue Cover Design. They are in the form of a poster and are reproduced in fac-simile as to size and color directly from the original. They are all printed in two colors and gold, on extra heavy paper and are ready for framing. They will be mailed carefully packed, and registered against order accompanied by remittance, (check on N. Y. or money order.) Price, $1.50 net.

C. P. GOERZ AMERICAN OPTICAL CO.

52 Union Square, NEW YORK, and Heyworth Building, CHICAGO
Pacific Coast Agents, Telgmann & Torka, San Francisco, Cal.

BERLIN PARIS LONDON ST. PETERSBURG VIENNA

13. Exhibits for the Manufacturers' and Dealers' Department should be shipped care of Frank W. Medlar, Secretary Photographers' Association of America, care Steele Educational Building, Dayton, O.

All charges must be prepaid, and all exhibits *must be* in place on the morning of Aug. 6, 1907.

14. No manufacturer or dealer, or their representative, will be permitted to transact business on the floors of the Convention Hall unless *he* or *they* rent floor-space, wall-space, desk room or convention privileges.

15. Manufacturers and dealers, in renting desk-space, are to understand that this constitutes their only privileges, and whenever extra tables or surrounding floor-space are used for the display of their goods they will be required to pay for the floor instead of desk-space.

16. All manufacturers, dealers or their representatives attending the Convention will be required to pay the Associate Membership fee of $2.00.

COMMITTEES

Hotel and Accommodations — A. T. Proctor, Frank W. Medlar.

Entertainment — A. L. Bowersox, Chairman; J. M. Appleton, C. L. Lewis, J. Zweifel, F. R. Barrows, A. Grossman.

Decoration and Hall — C. L. Lewis, A. T. Proctor, Frank W. Medlar.

Ladies' Entertainment — Mrs. A. L. Bowersox, Mrs. C. J. Van Deventer, Mrs. J. Zweifel, Mrs. F. R. Barrows, Mrs. C. L. Lewis.

Membership Buttons — F. R. Barrows, A. T. Proctor.

Press — Frank W. Medlar, C. L. Lewis, A. T. Proctor.

Transportation — F. R. Barrows, C. L. Lewis, A. T. Proctor.

Printing and Advertising — F. R. Barrows, Frank W. Medlar, C. L. Lewis.

Association Review — F. R. Barrows, A. T. Proctor, C. L. Lewis.

Information — F. R. Barrows, Frank W. Medlar.

Local Press — A. L. Bowersox.

FRANK W. MEDLAR, *Secretary*.

NECROLOGY

THE death is recorded of Mr. R. Maynard, of Victoria, B. C., aged seventy-five years, one of the oldest photographers on the Pacific Coast. His studio, as well as his extensive photographic supply business, will be carried on by his son, Albert H. Maynard.

TWO FOR ONE

THE success of our well-known monograph, *The Practical Photographer*, each issue devoted to one photographic subject, has been remarkable. Several of the issues, such as "Developing and Developers" and "Photographic Retouching," were exhausted long ago. As we frequently have demands for these two issues from persons wishing to complete the set — the entire series comprising twenty books — we make the following offer:

TWO FOR ONE

which means that, in exchange for *one copy* of "Developing and Developers" or "Photographic Retouching," in good condition and sent to us post-paid, accompanied with five cents in stamps (postage), we will send, post-paid, *two* copies of *The Practical Photographer* covering different subjects, except Nos. 1 and 2 — "Trimming, Mounting and Framing" and "Printing on Bromide and Gaslight Papers," of which we have only a limited number of copies.

ONE FOR ONE

The terms of this exchange are as follows: On receipt of a well-preserved copy of the January issue of THE PHOTO-ERA, 1906, we will send, post-paid, one copy of *The Practical Photographer*. Any one of the twenty subjects may be selected, except Nos. 1, 2, 3 and 9.

DR. KARL MUCK

DR. MUCK, whose excellent portrait, made for us by J. H. Garo, appears in this issue of THE PHOTO-ERA, is the prominent musical figure *par excellence* in this country at the present time. The Boston Symphony Orchestra was extremely fortunate to secure so eminent and successful a musician as its conductor, when Wilhelm Gericke relinquished this honorable position last year. It is largely due to the friendly feeling for the United States that Emperor William permitted Dr. Muck, bound by contract to the Royal Opera House at Berlin, one year's leave of absence to enable him to accept, even for so short a term, the position of conductor of the most superb body of instrumentalists in the world — the Boston Symphony Orchestra. Dr. Muck has for a number of years been the chief conductor of the famous Berlin Opera House, enjoying also a high reputation as interpreter of great orchestral works. As leader of Boston's famous band, he is not only fulfilling all that has been predicted of him, but proving himself quite the equal of such scholarly and celebrated musical interpreters as Mottl, Weingartner, Steinbach, Schuch and Colonne, with whose abilities American audiences are familiar.

The question that is already agitating musical Boston, and also New York, Philadelphia and Chicago, where Dr. Muck has greatly endeared himself is, Can he be retained? Can the German Emperor, who is master of this musical situation, be persuaded to yield him to America, which is anxious to retain him? We hope that this interesting problem will not be the cause of international complications. We have already a nut to crack in solving the Japanese school-question, and want no more at present.

NOTES AND NEWS

ROYAL VELOX PAPER

THIS is a new product of the Eastman Kodak Company, a heavy, gelatine-coated stock, with a semi-rough surface and a beautiful grain, that lends itself readily to broad, artistic effects. We have just seen some prints made on this new gaslight paper, both in black and sepia. A careful examination shows that, while beautiful and mellow, the sepia prints — which are redeveloped with Velox Redeveloper — retain all the detail, from the high-lights down to the deepest shadows, that are visible in the black-and-white prints. All the tonal gradations are well marked. Practical workers who have a predilection for sepia tones know the difficulty of preserving detail and tonal gradations in this popular tint. The new Royal Velox presents no troubles of this kind.

A NEW TELEPHOTO-LENS

THE firm of Carl Zeiss, of Jena, Germany, some time ago constructed a rapid objective for distance work, that can be used in place of the regular lens, thus obviating a special attachment. Dr. Rudolph and Dr. Wandersleb, who work out the optical formulæ for the Carl Zeiss Optical Works, have lately calculated a new construction for a telephoto-lens, especially adapted to hand-camera work. The peculiarity of this new lens is its great illumination and consequent working-rapidity, and it is calculated to appeal very strongly to persons who wish to directly photograph animals in the open, and do work of a similar nature. It is especially adapted to photographing objects from great heights, such as from balloons. The instrument has a relative opening of F/14 and a focal length of about eighteen inches. The bellows needs to be extended only about six inches. By merely unscrewing the regular lens of a camera, this new telephoto-lens may be used directly in its place, providing the flanges are interchangeable. The focusing is effected by means of a scale in the usual way. Highly successful work has already been achieved with this new lens, and it is expected to be in great demand among photographic specialists.

AN INTERESTING EXHIBITION

THE New England Forest, Fish and Game Association holds its second annual exhibition at the Mechanics Building, Boston, Mass., Mar. 30 to Apr. 13, 1907. So many of our workers are interested in fishing and hunting with the camera that this exhibition will undoubtedly appeal to them very strongly, especially as the Committee of Arrangements has promised to make this exhibition the most complete and unique in the history of the Association. The displays will be divided into these groups: Group A will be devoted to Forestry; Group B, to Food and Game Fishes; Group C, to Animals; Group D, to Game, Song and Insectiverous Birds; Group E, Trade Exhibits; Group F, Art Associated with Forestry, Fish and Game; Group G, Loan Exhibits. Group F will interest photographers particularly on account of the numerous oil-paintings, water-colors and photographs which will comprise this department. No doubt a visit to this exhibition will inspire many of our workers, given to photography in forest, field and stream, with new ideas. We therefore suggest that those who can conveniently do so visit the above-named exhibition, early in April.

PRINTS FOR REPRODUCTION

IT frequently happens that a photographic print does not receive full justice at the hands of the half-tone engraver, simply because it does not conform to the requirements of the half-tone process. In every case, whenever possible, workers are requested to send us, together with a sepia original, if that be the one submitted, another printed in black and white, with all the gradations that are desired to be retained. The print that will yield all the desirable qualities of the negative, and is preferred to all others by the half-tone engraver, is one made on some good glossy paper capable of giving full detail and softness, without undue contrasts. Even if such a print deviates slightly from pure black and white, approaching a gray or slightly brown color, it does not seriously matter; but it appears that the middle tones and details in the shadows photograph much better when the tone of sepia prints is uniform. Besides, they require much less exposure in the process, a feature that commends itself very highly to the photo-engraver.

In the case of a print in sepia the reproduction of the middle tones runs towards the shadows, which do not retain their tonal values as they appear to the eye. To overcome this defect — for it is a defect only in the eyes of the half-tone engraver — the latter is to work for a flat reproduction and through the medium of burnishing try to restore, in a measure, the lost gradations. Almost any one is lost to the beauties of a fine sepia print, and the requirements of a print needed for reproduction rarely occur to him. In some cases this means for us to obtain prints other than strong sepia impressions, and it is almost impossible to do them justice, however beautiful they appear to the eye. A case in point is the charming prize photograph, "Revery," by Brock & Koonce, which appeared in these pages. Its strong sepia color did not favorably impress the half-tone engraver, one of the most skilful in the business. He made repeated trials, and the best he could do was the result which we were obliged to use in the last issue. It by no means does justice to the superb original, and we regret this exceedingly, as we very much desired our readers to obtain a favorable impression of this portrait.

Eastman Kodak Company
ROCHESTER, N. Y., *The Kodak City.*

ANOTHER VELOX SUCCESS.

It is not often in photography that we can afford a new medium of expression without having to learn a new process. Royal Velox is one of these delightful exceptions; all the joys of accomplishing results heretofore just beyond our reach, with the assurance of good results in our initial efforts.

Royal Velox is simply an old tried and true friend in a new dress; Velox coated on a soft mellow toned stock. What possibilities Royal Velox affords; how often have we strived to reproduce the soft atmospheric haze or add just a little more warmth to our picture, just that little that no pure white stock could yield.

Royal Velox gives us just that quality, with the assurance that we can reproduce it at will, and at the same time, not lose the brilliance and delicate gradation of ordinary Velox. When sepia toned with Velox Redeveloper, Royal Velox becomes a formidable rival to some of the more expensive printing processes, and in truth possesses the subtle charm of an old etching.

For every class of work and for every subject, Royal Velox is splendidly adapted and while we would not recommend Redeveloped Royal Velox for snow scenes—just try a snow scene on Royal Velox developed in the ordinary manner; the effect is charming in the extreme.

For portraiture from negatives either high or low in key, Royal Velox is splendidly adapted, softening and toning down the higher lights while still retaining the shadow definition and delicacy.

Royal Velox possesses so many charming possibilities that it well merits a hunting up and reprinting from your choice negatives.

Royal Velox is made in both regular and special grades and coated on a medium weight stock just suited to its requirements.

At all Kodak dealers.

WHEN TO STOP DEVELOPMENT.

In just twenty minutes if you use the Kodak Tank Developer—if any dark-room method be employed—when you *guess* it has had enough.

There you are, a definite decided answer when you use modern and up-to-date methods,—and guess work by all the others. Good negatives have been and will be produced by dark-room development. There is no room for argument there. But you can move a trunk with a hand barrow, also with an auto truck, and the auto truck will move more trunks in less time and with greater certainty as to arrival than the hand barrow.

That is what you are after—a higher standard of efficiency with the minimum amount of time and labor. The Kodak Tank Developer affords just that; if you have not the experience, it is provided for you; if you are proficient in photographic manipulations, the tank relieves you from a great amount of irksome labor and permits you to utilize your time to better advantage doing other necessary things, and in addition affords you a greater number of good picture foundations.

The Kodak Tank Developer is backed by scientific theory, and two years practical use and has fully demonstrated its ability to produce a higher percentage of good negatives than can be produced by an expert working under the old and uncertain dark-room conditions. It is science against guess-work and convenience against inconvenience—and economy against wastefulness.

Eastman Kodak Company
ROCHESTER, N. Y., *The Kodak City.*

A GROWING IDEA.

The Kodak would probably have been valueless to Daniel Boone as a weapon to use against the denizens of the Ohio Valley forests a century and a quarter ago. Nevertheless the Nimrods of to-day are taking to it. Many of them find more satisfaction in photographing than in shooting the inhabitants of the woods.

Several interesting books on the subject have been published, the latest of which is "Hunting Big Game with Gun and with Kodak" (G. P. Putnam's Sons, New York) by William S. Thomas.

Mr. Thomas is an experienced sportsman, an easy writer and a good photographer. He does not, it is evident, delight in the wanton destruction of game, but rather in the spirit of the chase and of the woods. When the larder is full the rifle is laid aside for the Kodak, and his photographic trophies are evidently prized more highly than even those of the soft nosed bullet. The book is worth anybody's reading, but it especially appeals to those who are interested in photography.

There can be no doubting the present tendency of the people, in this country, at least, to get more good from the great out-doors. Mr. Thomas' book fosters that idea and makes a strong plea for the use of camera rather than rifle in the quest for big game.

"There are no game laws for those who hunt with a Kodak."

AT LAST.

A four by five Pocket Kodak with all the practical and comfortable convenience of the smaller preceding models. Step by step the Kodak system of picture making hassmoothed the pathway of the amateur photographer, and made more and more enjoyable his wanderings afield by absolving him from burdensome apparatus. A four by five Folding Pocket Kodak could have been constructed some time ago—the demand was surely sufficient to warrant it—but it would not have been the ingenious triumph embodied in the 1907 No. 4 Folding Pocket Kodak.

All our lengthy experience in camera construction and Pocket Kodaks in particular, has been concentrated in this model—all the little conveniences and perfected mechanical adjustments, that while simple in themselves, go so far toward making the complete and perfect instrument.

The No. 4 Folding Pocket Kodak is in truth a *Pocket* Kodak, as it measures when closed, but 2¼ inches in thickness and 9 inches in length. Its equipment includes the rising and sliding front, automatic focusing device and new and improved spool pins. The optical equipment is superb; the lenses are specially selected rapid rectilinear of 6½ inch focus, with a speed of *f.* 8. The shutter is the F. P. K. Automatic with both bulb and finger release.

Taking the twelve, six and "Double Two" daylight loading film cartridges, and adapted to the use of glass plates when desired, the No. 4 Folding Pocket Kodak is the triumphant embodiment of the long cherished desire for a pocket four by five.

The price is $20.00.

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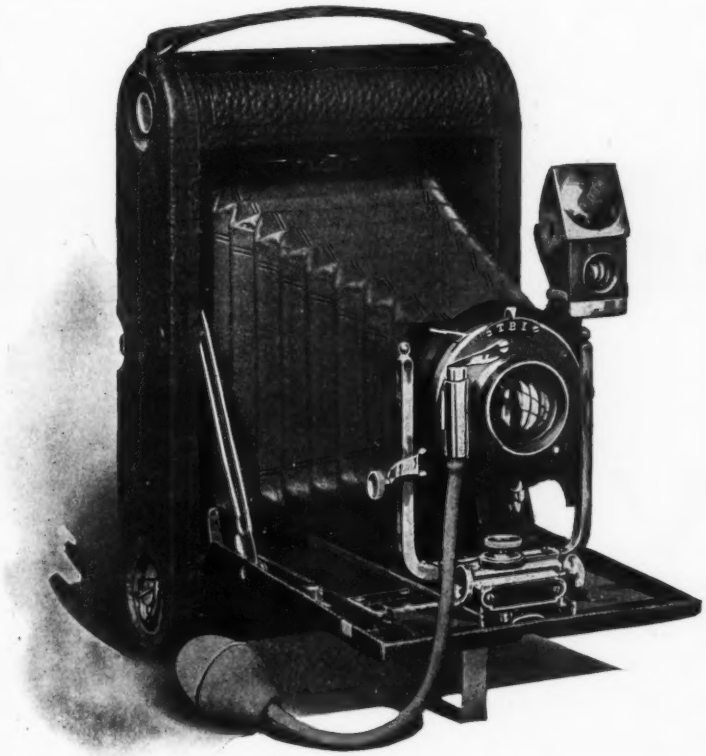

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No. 4 Folding Pocket Kodak

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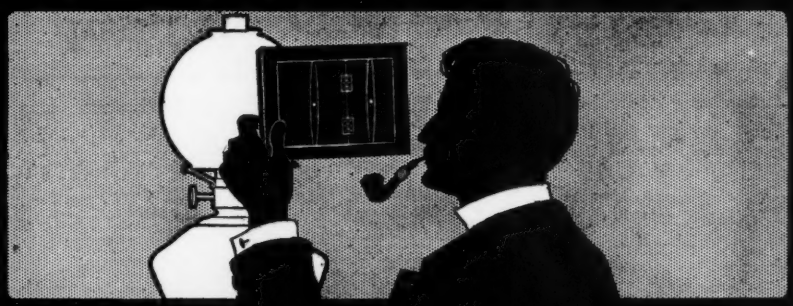

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